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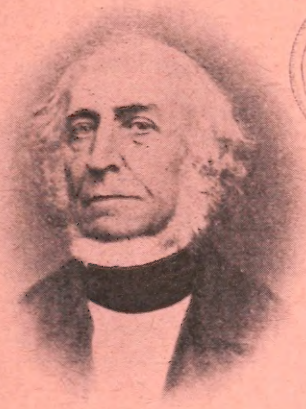

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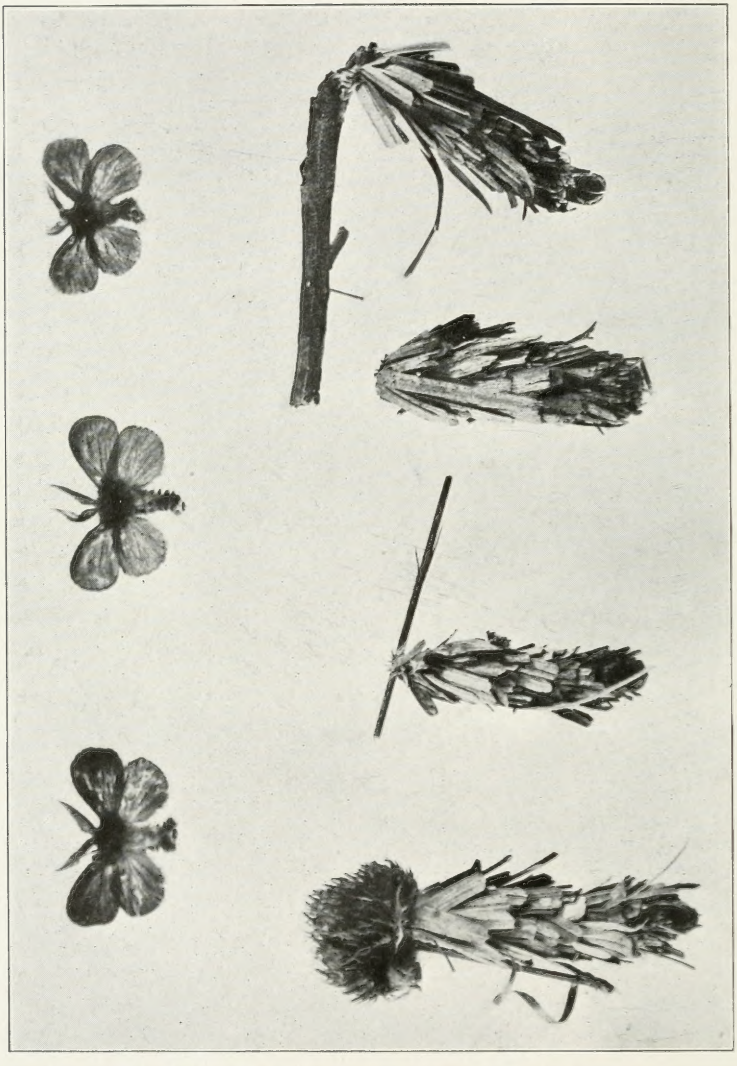

EURYCTTARUS TRACYI—JONES.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXII. MAY, 1911. NO. 5.

CONTENTS:

Jones—A new North American Moth of the Family Psychidae (Lepid.).. 193
Banks—Cases of Phoresie 194
Beutenmuller—Three new Species of Cynipidae (Hym.)..... 197
Dyar—The American Species of Diatraea Guilding (Lepid., Pyralidae) 199
Girault—A Supposed Occurrence of Anagrus incarnatus Haliday in the United States (Hym.)..... 207
Lovell—New Records of Bees: Sphecodes and Prosopis (Hym.)..... 211
Girault—The Occurrence of the Mymarid Genus Anaphoidea Girault in England (Hymen.)..... 215
Cockerell—A new Coccid on Ledum (Hemip.)..... 217
Rohwer—Additions and Correctionsto "The Genotypes of the Sawflies and Woodwasps or the Superfamily Tenthredinoidea (Hymen.)..... 218
Skinner—A new Variety of Chionobas 220
Muttkowski—A new Gomphus (Odon.) 221
Felt—Endaphis hirta n. sp. (Dipt.).... 224
Editorial 225
Notes and News..... 226
Entomological Literature 232
Doings of Societies 237
Obituary—Dr. Edward Palmer..... 239
Prof. Felix Plateau 239

A New North American Moth of the Family Psychidae (Lepid.).

BY FRANK MORTON JONES, Wilmington, Delaware.

(Plate VI.)

Eurycttarus tracyi nov. sp.

Male.—Antennæ larger and more broadly pectinated than in *confederata,* each pectination terminated with a bristly tuft; thorax heavy, densely hairy; abdomen hairy, in dried examples barely exceeding secondaries; wings broad; primaries short, costa full, apex so rounded that no angle is discernible; secondaries broad, evenly rounded; color smoky brownish gray, the primaries and thorax slightly darker than the secondaries and abdomen; wings without markings, not very opaque, in some lights with a brilliant purplish-blue reflection beneath, fainter above; expands 17-19 mm; vein 6 absent on both wings, which refers this insect (Neum. and Dyar, Jour. N. Y. Ent. Soc. 11, 118) to *Eurycttarus* Hamps.; the anal vein of primaries forks at half its length from base, the upper branch arching in a regular curve, not angled at its point of widest separation as in *confederata;* vein 8 of primaries not stemmed with 9 before reaching cell, or in some examples very shortly stemmed (in *confederata* the stem is as long as the remaining length of 8 from stem to margin of wing); on secondaries the oblique vein from 8 divides the vein at about half its length from base; in *confederate* this oblique vein is about one third distant from the base; other differences, due to the widely different wing-shape, will appear by comparison.

Larval Case: Length 21-27 mm., and of almost uniform diameter; thatched outside with short flat pieces of dried grass, closely applied, and overlapped or shingled longitudinally.

Described from four males bred (May, 1910) from larvae and numerous cases collected at Biloxi, Mississippi. Types are deposited in the U. S. National Museum and in my own collection.

The female is wingless and grub-like as in the related species; a single female was bred but was not secured in condition for detailed description. Like *confederata,* this insect passes the winter as a larva, apparently always in the last larval stage, and feeds for a short time in early spring, suspending its case to some tree, fence, or twig for final transformation. Though apparently by choice a grass-feeder in swampy places, the spring-time food is often the petals of flowers, and several larvae were found devouring the tender yellow petals of pitcher plants (*Sarracenia sledgei*). Though of less expanse, this is a much more robust insect than the well-known *E. confederata* G. & R. and its larval case is proportionately larger. I take pleasure in dedicating this interesting species to Prof. S. M. Tracy, whose hospitality and knowledge of the district and its flora added greatly to the pleasure and profit of my stay at Biloxi.

Cases of Phoresie.

By Nathan Banks, East Falls Church, Va.

The cases where insects are transported by other insects are comparatively few. Among the mites, there are long series of forms in which it is the rule that the mite is in some of its stages transported by insects. The well-known case of the triungulins of Meloidae, being carried by bees, is found in all text-books. But there is a considerable number of records of other insects being transported by larger insects. Some years ago Mrs. Slosson sent me some Chrysopids from Mt. Washington that had, clinging to their wings, some small flies.

Since then I have been interested in listing articles on this subject, and the titles, with comment, are herewith presented, recognizing, of course, that the list is not complete.

Meigen, J. W.—Systematische Beschreibung der europaischen zweiflugelischen Insekten VII, p. 409, 1838.

Describes *Limosina sacra,* a Borborid fly found on the under surface of the sacred Scarabæus (*Ateuchus sacer*).

Xambeu, P.—Bull. Soc. Ent., France, 1877, p. lxix. Records finding a specimen of a Chalcidid.

Podagrion pachymerus Dalm., attached to the under wings of a *Mantis religiosa* L.; it waits till the female makes an egg-mass, and then deposits its eggs therein.

Moulton, J. T.—Flies riding on a tumble-bug. Amer. Entom., vol. III, p. 226, 1880.

Noticed in Missouri, a small fly (possibly *Limosina,* from the brief description), riding on a tumble bug.

Sharp, D.—Proc. Ent. Soc., London, 1890, p. xxx.

Exhibited a specimen of one of the bird flies, *Ornithomyia avicularia,* to which were attached by their mandibles several specimens of Mallophaga.

Eaton, A. E.—Flies riding on beetle back.—Ent. Mo. Mag., 1896, p. 139.

Borborid fly on back of a coprophagous beetle in England.

Walker, J. J.—Flies riding on beetle back.—Ent. Mo. Mag., 1896, p. 161.

Notes *Ateuchus variolosus* at Gibraltar with Borborid flies upon them.

Lesne, P.—Moeurs du Limosina sacra. Phénomènes de transport mutuel chez les animaux articulés; origine du parasitisme chez les insectes Diptères.—Bull. Soc. Ent., France, 1896, p. 162-165.

Gives account of *Limosina sacra* on specimens of *Ateuchus laticollis;* also notes that larvae of *Antherophagus* (Cryptophagid beetles), ride on bees like triungulins of Meloids. Lesne proposes the term "*phorésie*" for this transportation of one insect by another.

Chobaut, A.—Observations sur un Diptère vivant sur les Ateuchus.—Bull. Soc. Ent., France, 1896, p. 166.

Confirms the observations of Lesne.

Bloesch, Ch.—Physapodes se sont transporter par les guepes.—Feuille Jeun. Natur. (3) vol. XXV, p. 75-76, (1896).

Slosson, Mrs. A. T.—Singular habit of a Cecidomyid—Ent. News, 1896. p. 238.

A Cecidomyiid attached to *Chrysopa;* suggested that the cecidomyiid is predaceous on plant lice, that are also preyed upon by the *Chrysopa* larvae.

Cummings, H. A.—Parasites of the house-fly. Science Gossip, 1899.—(Amer. Mo. Micr. Journ., Oct., 1899, p. 318.)

Notes that in Bermuda a small red ant is carried by the fly.

Kertesz, K.—Dipterologisches aus New Guinea. Termes. Füzetek. XX, p. 611-613, 1897.

Small flies riding on a large one.

Biro, L.—Commensalismus bei Fliegen.—Termes. Füzetek. XXII, p. 200, 1899. (Also Rovartani Lapok, 1897, p. 129).

Two *Agromyza minutissima* carried by an *Ommatius minor,* in New Guinea.

Mik, J.—Merkwürdige Beziehung zwischen *Desmometopa m.- atrum* Meig. aus Europa und *Agromyza minutissima* V. d. Wulp. aus New Guinea.—Wien. Ent. Zeit., 1898, p. 146-151.

Found 13 specimens of a small fly (*Desmometopa* (*Agromyza*) *m-atrum*) attached to a dead worker bee, that was still fresh. Reviews papers by Biro and Kertesz.

Warner, W. V.—Proc. Ent. Soc. Wash., V. p. 308-309, 1903.

Exhibited specimen of *Scelio* (*Serphidae*) clinging by jaws to the side of a grasshopper, *Dichromorpha viridis.* The genus *Scelio* is parasitic on the eggs of grasshoppers.

Schulz, W. A.—Dipteren als Ektoparasiten an südamerikanischer Tagfaltern.—Zool. Anzeiger, XXVIII, p. 42-43, 1904.

Notes Phoridæ attached to butterflies of genera *Morpho* and *Helicopsis* in Brazil.

Fletcher, T. B.—Ent. Mo. Mag., 1909, p. 168.

He exhibited at meeting of Ent. Soc. Lond. 2 June, 1909, an example of *Scarabaeus gangeticus* taken on wing, carrying small Borborid flies.

The habit of certain Borborid flies in attaching to coprophagous beetles is evidently world wide, and undoubtedly aids them in locating suitable breeding places. The habit of certain Hymenopterous egg-parasites of clinging to parents of the eggs is quite possibly confined to certain groups. The other cases are difficult of classification, and some may be accidental.

Three new species of Cynipidae (Hym.).

By William Beutenmuller, American Museum of Natural History, New York City.

Dryocosmus favus sp. nov.

Female.—Head black, finely rugoso-punctate, mouth parts dull rufous. Antennæ 14-jointed, first joint quite stout, second much shorter, third long, slender at base and broad at end, fourth about one-half as long as the third, fifth shorter than the fourth, sixth to last short and almost uniform in size, deep brown, terminal joints almost black. Thorax jet black, smooth and shining, very minutely punctate anteriorly and laterally, which parts are slightly hairy. Parapsidal grooves sharply defined, with a few short hairs along the outer edges. Median groove wanting. Anterior parallel lines very short and scarcely evident. Lateral grooves wanting. Pleurae very finely rugose, with a rather large polished area. Scutellum finely rugose, with a lateral ridge which extends around the apex, foveæ at base not distinct. Abdomen black, smooth and shining with a few short hairs at the base dorsally. Legs pitchy brown pubescent, coxæ black. Wings hyaline, veins pitchy brown. Radial area partly open. Areolet distinct. Cubitus extending to the first cross-vein. Length, 3 to 3.50 mm.

Gall.—In clusters from about fifty to one hundred on the trunks of young red and scarlet oaks (*Quercus rubra* and *coccinea*), immediately above the ground, in autumn. Hard and woody (when dry) probably soft when fresh, monothalamous. Oblong, narrower at base than at apex, which is flat. In form they are somewhat like square tubes or five or six-cornered tubes, giving them the appearance of cells of a honeycomb. Hollow inside and rather thin-walled. The fly emerges

from the apex of the gall. Length, 5 mm.; width of apex, 3 mm.; diameter of cluster, 28 mm.

Habitat: Phillips Bluff, La.; Fleetwood, Pa.

The fly was described from many specimens loaned to me by Prof. A. D. Hopkins. The species belongs to the European genus *Dryocosmus* Giraud not heretofore recorded from North America. The fly emerges very early in spring and the gall reaches maturity late in fall.

Amphibolips nigra sp. nov.

Female.—Head rugose more so on the cheeks and vertex. Ocelli large and smooth. Antennæ rather short and stout, 16-jointed. Thorax black, coarsely rugose with the parapsidal grooves lost in the rough surface. Anterior parallel lines and lateral grooves present, pubescent. Pleuræ rugose but less so than the thorax on top. Scutellum black, coarsely rugose with two large somewhat shining foveæ at the base separated by a fine ridge. Abdomen black, slightly shining, minutely punctate and covered with very short, whitish hairs. Legs black, punctate and hairy, tarsi brown. Wings dusky hyaline with a darker streak beyond the radial area, veins brown and thick, second cross-vein in a brown cloud. Areolet large, cubitus extending to the first cross-vein. Radial area open. Length, 5 mm.

Habitat: Durango, Mexico. February 1-7, 1897 (Dr. Edward Palmer).

Type: United States National Museum.

Andricus durangensis sp. nov.

Female.—Head very deep reddish brown, cheek and vertex granulated, face more coarsely sculptured. Antennæ 14-jointed, slender. Thorax coarsely granulated, very deep reddish brown, almost black. Parapsidal grooves, anterior parallel lines, median and lateral grooves present distinct, but not sharply defined owing to the rough surface of the thorax. In one example the median and parapsidal grooves are scarcely evident. Pleura rugose. Scutellum coarsely rugose with the foveae at base not distinct. Abdomen smooth, shining red. Legs dark reddish brown. Wings glassy hyaline, veins brown, first radial vein not reaching the costa. Areolet present. Cubitus not touching the first cross-vein. Second transverse vein curved. Length, 4 mm.

Habitat: Durango, Mexico. April 3—May 6. (Dr. Edward Palmer.)

Type: United States National Museum.

The American species of Diatraea Guilding (Lepid., Pyralidae).

By Harrison G. Dyar, U. S. Nat. Mus., Washington, D. C.

I have referred (Proc. ent. soc. Wash., xi, 29, 1909) to the fact that Sir G. F. Hampson, in his revision of the Crambinae (Proc. Zool. soc. Lond., 1895) describes the genus *Diatraea* in his synoptic table as having a frontal prominence, whereas the type species, *saccharalis* Fabr., is really without this structure. It is true that in the text the frontal prominence is not mentioned, the statement being "frons with a tuft of hairs." I was formerly inclined to regard this as an error in the diagnosis, subject to correction, but the examination of further material has convinced me that the frontal prominence is a variable character, of less than specific value. The generic table will need correction, but the genus *Diatraea* may include species with or without the frontal prominence.

In the same paper Hampson recognized but three American species of *Diatraea*. This number will have to be considerably amplified. I arrange the species at present in the following manner:

§ 1. *Saccharalis* group.

Diatraea saccharalis Fabricius.

This species is divisible into a number of well-marked geographical forms. Two of them occur in the United States. The typical *saccharalis* reaches us by the way of the West Indies and occurs in Florida. The race *crambidoides* Grote comes from Mexico and occurs in the Gulf States. The following subspecies are before me:

Diatraea saccharalis saccharalis Fabricius.

Phalaena saccharalis Fabricius, Ent. Syst., III, 2, 238, 1794.

Crambus leucaniellus Walker, Cat. Brit. Mus., XXVII, 161, 1863.

This form is small, the wings rather narrow, but squarely tipped and not especially pointed. The front is smooth and flat, scarcely at all projecting before the eyes and without any trace of the frontal cone or tubercle. Specimens are before me from French Guiana (W. Schaus), Cuba (W. Schaus,

E. A. Schwarz), Trinidad (F. W. Urich) and a single female from Peru. Also a female from southern Florida (H. G. Dyar). Walker's *Crambus leucaniellus* was described from Santo Domingo and so must belong to this form; but I have not seen any males from Santo Domingo. The two females before me (A. Busck) agree with Cuban females.

Diatraea saccharalis grenadensis, new variety.

A single male is before me. The front is distinctly protuberant, but smooth, without any cone; the hind wings are white, the fore wings pale straw color and pointed at apex. The specimen looks like a little female.

Grenada, British West Indies (Schaus collection).

Type, No. 13610 U. S. National Museum.

Diatraea saccharalis obliteratellus Zeller.

In this the front is strongly roundedly protuberant and there is a minute cone towards the upper part of the front. It was described from Brazil. I have females only from Castro, Parana, Rio Janeiro and Nova Friburgo (Schaus collection), besides one from Sapucay, Paraguay (W. T. Foster).

Diatraea saccharalis tabernella, new variety.

The front is rather flat, but is drawn out above into a distinct pointed cone, somewhat flattened dorso-ventrally. The hind wings are white in the male as well as in the female. The fore wings are straw-color, the two lines of dots present in both sexes, but rather weak in the females or partly obsolete. The wings are rather narrow, squarely shaped, the apex pointed.

Canal Zone, Panama and Nicaragua.

Types, male and female, Tabernilla, Canal Zone, Panama (A. Busck).

Type, No. 13611, U. S. National Museum.

This form may possibly be a distinct species.

Diatraea saccharalis crambidoides Grote.

Chilo crambidoides Grote, Can Ent., XII, 15, 1880.

? *Crambus lineosellus* Walker, Cat. Brit. Mus., XXVII, 162, 1863.

In this form the front is roundedly prominent, slightly projecting above beyond the eyes, but without cone or tubercle. The male has the hind wings dusky, those of the female are white. The wings are

narrow, outer margin oblique, apex pointed. The male is brownish ochre in color, the female straw yellow; the two rows of brown dots are distinct in both sexes.

Range: Mexico, numerous localities, Gulf States and lower Mississippi Valley.

Grote's *crambidoides* was described from Kansas, so there can hardly be any doubt of the application of the name. Walker's *lineosellus* was described from Honduras, whence I have no material. If the names shall be found to refer to the same form, Walker's name would have priority.

Diatraea pedidocta, new species.

Similar to *D. saccharalis crambidoides.* The females are even narrower-winged, brownish ochre instead of straw yellow, while the outer row of dots runs closer to the margin and anal angle and is darker in color. The fore wings resemble those of male *crambidoides* rather than those of the female. The hind wings are white.

Two females, Cordoba, Mexico, January 27, February 27, 1908 (F. Knab).

Type, No. 13612, U. S. National Museum.

This is perhaps only a dark variety of the female of *crambidoides* Grt.

Diatraea instructella, new species.

A large species resembling *crambidoides,* much larger, the markings coarser, the lines of dots distinct, diffused, almost continuous, the inner line drawn in at its termination almost to the base of the wing. Discal dot distinct, black; terminal dots minute. Hind wing white. The front is smooth, rounded, gently convex.

One female, Popocatepetl Park, Mexico, July, 1906 (W. Schaus).

Type, No. 13613, U. S. National Museum.

Diatraea magnifactella, new species.

Another large species of the *crambidoides* type. Male brownish ochreous, the hind wing dusky, almost blackish; lines of dots on the fore wings distinct, approximated. The wings are rather broad, square at the apices. Female pale straw yellow, the markings much less distinct than in the male. Hind wings soiled yellowish, slightly shaded with fuscous toward anal region. The front is prominent and has a small central cone, the tip of which projects through the vestiture.

Male and female, Orizaba, Mexico, April, 1908 (R. Müller); Male and two females Cuernavaca, Mexico, June and August, 1906 (W. Schaus); one female, Jalapa, two females, Oaxaca, Mexico (Schaus collection).

Type, No. 13614, U. S. National Museum.

Diatraea minimifacta, new species.

A small square-winged species. The wing is darkly shaded through the middle, obscuring the lines, which are sub-continuous and not resolved into dots; veins brown-lined beyond this shade, terminal black dots between the veins with white points before them relieved on the brown ground. Hind wing white. Expanse, 18 mm. The front is smooth and nearly flat.

Two females, Trinidad, British West Indies (Schaus collection, A. Busck).

Type, No. 13615, U. S. National Museum.

Diatraea continens, new species.

Fore wing straw yellow, the veins lined in brown, with faint lines between; two brown oblique parallel lines joining a brown cloud at apex; terminal dots small black, discal dot brown. Hind wing white, nearly pure. Front smooth and nearly flat.

One female, Castro, Parana, Brazil (Schaus collection).

Type, No. 13616, U. S. National Museum.

Diatraea pedibarbata, new species.

Front smooth, rounded, slightly prominent; hind tarsi short, the tibiae with a large tuft of hairs. Dark brown, the lines as usual but not relieved, obscure against the dark ground. Body parts also dark, but hind wing whitish, with only a slight straw-color tinge. Expanse, 23 mm.

One male, St. Laurent, Maroni River, French Guiana (W. Schaus).

Type, No. 13617, U. S. National Museum.

Diatraea canella Hampson.

Diatraea canella Hampson, Ann. Mag. Nat. Hist., (6) XVI, 349, 1895.

This species has a strong frontal prominence in the form of a plate with a point in the center. The general color is reddish gray without any of the straw yellow tint. The dots on the fore wing are larger and less strigose than usual in the *saccharalis* group; they are nearly obsolete in the female, which is of a nearly uniform reddish gray.

Specimens are before me from Grenada, Trinidad and the Guianas. Hampson gives also Brazil, but Brazilian specimens before me are separable specifically. The species feeds on sugar cane in the larval state, as proved by a bred specimen from Mr. F. W. Urich.

Diatraea amnemonella, new species.

Similar to *canella* Hamps., but narrower-winged, the markings more diffused and obscured. The female is gray, like the male, while the hind wings are white in both sexes. The frontal prominence is a central cone, not a plate.

Male and female, Castro, Parana, Brazil (Schaus collection). Type, No. 13618, U. S. National Museum.

Diatraea zeacolella, new species.

Female with the wings broad, the apex square; color straw yellow, the brown lines on the veins conspicuous, generally more so than the lines between the veins; no bands of dots, or only slight traces of them; terminal dots larger than in *saccharalis,* but yet small, generally present; discal dot black, present.

Male generally larger and somewhat broader winged than *saccharalis,* the same specific differences present as in the female, but in lesser degree; the two bands of dots are present, but are not intensified by dark shades; the linings on the veins are more contracted than in *saccharalis.*

Types, five males and nine females, Tryon, North Carolina, April 4, June 2, August 2 and 9, 1904 (W. F. Fiske); Ninety-six Post Office, South Carolina, larvae received July, 1880, issued May 9, 1881 (W. L. Anderson); Fredericksburg, Virginia, issued July 26, 1890 (Dept. Agr., No. 1015P); Alexandria County, Virginia, larvae in *Thripsacum dactyloides* July 15, 1891, adults issued August 13 and 21, 1891 (T. Pergande). Type, No. 13556, U. S. National Museum.

The figures published by Dr. Howard of the "larger cornstalk borer." (Insect Life, iv, 95, 1891) represent *D. zeacolella.*

This species is transitional toward the next group, the males having the markings of the *saccharalis* group, whereas the females considerably resemble *lineolata* Walker.

Iesta lisetta Dyar.

Iesta lisetta Dyar, Proc. Ent. Soc. Wash., XI, 29, 1909.

This little species has the straw-colored wings and rows of dots characteristic of the *saccharalis* group and also the essential generic character of the union of vein 11 with 12. But vein 10 is stalked with 8 and 9, and it is therefore necessary to remove the species from *Diatraea,* as I have done.

§ 2. *Lineolata* group.

Diatraea lineolata Walker.

Leucania lineolata Walker, Cat. Brit. Mus., IX, 100, 1856.

Crambus impersonatellus Walker, Cat. Brit. Mus., XXVII, 163, 1863.

Chilo neuricellus Zeller, Mon. Chil. & Cramb., 8, 1863.

The front has a distinct cone, across which runs a transverse ridge. The fore wings are brownish or straw color, the veins brown with brown lines between, not strongly contrasted; terminal dots absent or minute; discal dot often absent.

There is a lightening of the ground color in the interspaces beyond the cell, forming a faint pale ray outwardly from the discal dot, which is never very distinct, but gives a characteristic appearance. Hind wings soiled white in the male, with only a faint yellowish tinge in the female.

We have this species from Cuba, Trinidad, the Guianas, Venezuela, Costa Rica, Mexico and southern Arizona, all without any marked variation or tendency to local forms, except that in the northern end of its range there is a tendency to the loss of the frontal prominence. It is absent in a male from Tehuacan before me, in a female from Cuernavaca and in the single female from southern Arizona. This is not a fixed local character, as other specimens from the same places, indistinguishable in color, possess the frontal prominence.

Diatraea culmicolella Zeller.

Chilo culmicolellus Zeller, Mon. Chil. & Cramb., 7, 1863.

This was described from Colombia, and said to differ from the preceding only in the obsolescence of the linings and discal dot. I have no specimens from Columbia, so let the name stand, but I think it will be found to be the same as *lineolata* Walker.

Diatraea grandiosella, new species.

A single large female differs from the series of *lineolata* in its brownish color, without any yellow tint. The linings on the veins and between are very distinct; terminal dots minute, black; discal dot obsolete. The front is smooth, without prominence. Hind wings soiled white.

One female, Guadalajara, Mexico (Schaus collection).

Type, No. 13619, U. S. National Museum.

This may be a variation of *lineosella,* but it does not match any in the series. In *lineolata* when the veins are strongly lined the intravenular streaks are less strongly marked. In *grandiosella,* all are alike, heavily marked.

Diatraea pallidostricta, new species.

Front conically protuberant, but without any point or ridge. Wings as in *lineolata,* the linings indistinct and blurred, the whitish discal ray strong, broad and contrasted. Discal dot minute; terminal dots absent. Hind wing white.

One female, São Paulo, Brazil (Schaus collection).

Type, No. 13620, U. S. National Museum.

Diatraea angustella, new species.

The front is smooth, roundedly protuberant. Wings narrow, pointed at apex, much as in *lineolata* but darker, the veins strongly relieved in brown, the intervenular streaks broad and diffused, sometimes entirely filling the spaces between the veins. No terminal dots. Discal dot small, sometimes absent. Hind wings white, slightly soiled in the male, faintly yellowish in the female.

Two males, ten females, Castro, Parana, Brazil (Schaus collection).

Type, No. 13621, U. S. National Museum.

Diatraea bellifactella, new species.

Front with a cone and transverse chitinous ridge. Wings moderately broad, the apices depressed. Pale straw color, the veins strongly lined in brown; a brown shade from apex towards end of cell, in the male continued across wing by thickenings of the lines on the veins; an outer parallel row of thickenings oblique from middle of outer margin to middle of inner margin; streaks between the veins linear, not distinct; discal and terminal dots small, blackish. Hind wing soiled white in both sexes.

Male, Sáo Paulo, Brazil; female, Castro, Parana, Brazil (Schaus collection).

Type, No. 13622, U. S. National Museum.

Diatraea strigipennella, new species.

Chilo strigipennellus Hampson, MS.

Front with conical prominence with chitinous point at tip. Markings as in *lineolata*, but gray and brown, without straw color. In the male two faint curved parallel shaded lines. The pale discal ray is fairly conspicuous.

Specimens are before me from the Guianas and Brazil, including a female cotype from Castro, Parana.

Type, No. 13623, U. S. National Museum.

Sir G. F. Hampson writes that he suppressed his description of this species, having concluded that it was the same as *D. lineolata* Walk. It is, however, smaller, and gray, not yellow, while the males are narrower-winged and have the two parallel curved lines well shown.

Diatraea berthellus Schaus, new species.

"Fore wing with the costal portion ochreous brown, shading to yellow costally; a silvery white ray from base to outer margin, widening outwardly and diffused below; a gray area below this; inner margin broadly light yellow at base, the yellow shading into the gray outwardly and lost before the anal angle; a row of terminal black points; fringe metallic. Expanse, 20 mm.

Castro, Parana, Brazil," Schaus, MS.

Type, No. 13624, U. S. National Museum.

The front has a thick cone with sharp chitinous point. The species is wholly unlike the *Diatraea* species here discussed, and is, I think, not properly referable to *Diatraea*, but rather to *Chilo*. It is true that in the type vein 11 makes a short anastomosis with 12, but in the other three specimens it runs free, though very close to 12. The majority of the specimens have the vein free as in *Chilo*, while in the type itself there is only a short anastomosis, not a complete union of the veins as in *Diatraea*. The species resembles the North American *Diatraea parallela* Kearfott, but that is a typical *Diatraea* with flat front.

Crambus faunellus Schaus, new species.

"Fore wing straw yellow, shaded slightly with brown towards inner margin; veins faintly bordered with brown on each side; a brown discal dot, one below on vein 2 and a slight one at anal angle. A row of terminal black dots between the veins. Hind wings slightly shaded with brown except along costa; fringe pale on both wings. Expanse, 31 mm.

Sao Paulo, Brazil." Schaus, MS.

Type, No. 13625, U. S. National Museum.

The front is smooth, antennae of the male slightly thickened and flattened, fore wing with vein 7 given off further from the apex than 9, 11 curved and approximated to 12, 4 and 5 stalked. This brings it in the group with *distictellus* Hampson, than which it is much larger and has a terminal row of black dots on fore wing. I mention this species here because the females were included under *Diatraea lineolata* in the collection, to which they bear a strong superficial resemblance. They differ from the male only in having the wing slightly more pointed, the linings along the veins a little more distinct, while the spots are less distinct, and the hind wings are paler, being a slightly soiled white.

A Supposed Occurrence of Anagrus incarnatus Haliday in the United States (Hym.).

By A. A. Girault Urbana, Illinois.

Sometime during 1909 I received from Professor C. P. Gillette, of the Colorado Agricultural College, a slide bearing single specimens of both sexes of a species of *Anagrus* Haliday, with the request that I identify it if possible. The slide was labelled "probably from eggs of *Aphis pomi*." Soon after its receipt I examined the specimens and decided that they could not be separated from *Anagrus incarnatus* Haliday, specimens of which I have as a loan through the ready kindness of Dr. L. O. Howard. Subsequently, however, a more careful comparison showed differences of such character as to preclude the sameness of the two sets of specimens and the Colorado specimens are therefore representatives of an undescribed species. At the present time Mymarids of the Euro-

pean fauna do not occur in this country; that is to say so far as is known. Species of *Anagrus* are common here as are also species of other common genera but I have never met with a specimen which was similar to any of the European specimens in my possession.*

The new North American species which I shall call *Anagrus spiritus* is similar in all details of body structure, color, antennae and wing ciliation to *incarnatus* but differs in the following particulars: The marginal cilia of the posterior wings at the caudal margin are very long, the longest being seven or eight times longer than the greatest width of the wing blade, distinctly longer than in *incarnatus*—in that species only four or five times longer than the greatest width of the wing blade; otherwise the posterior wings are alike in both species. In the American species the parapsidal furrows are farther apart, in other words the mesoscutum is broader, much broader cephalad than its width at the caudal margin, the parapsidal furrows curving cephalo-laterad; in *incarnatus* the parapsidal furrows are but slightly curved cephalo-laterad, comparatively straight, consequently the mesoscutum is nearly rectangular but slightly broader at the cephalic margin than it is broad at the caudal margin and distinctly longer than wide, wedge-shaped. In *spiritus* it is only slightly longer than its greatest width, its caudal margin curved, its shape peltate. In *incarnatus* the caudal margin of this sclerite is nearly straight, slightly concaved. The fore wings in both species are nearly identical in shape, yet in *spiritus* they are slightly broader at the apex, with the tendency to bear one more line of discal ciliation (7 or 8 lines) and with longer marginal cilia. The antennae in both are very much alike, yet in the female the joints though similar in shape, yet are shorter in *spiritus* than in *incarnatus*, so that the sixth funicle joint is barely longer than the first; whereas in *incarnatus* it is distinctly longer than

*I may add that the differences between the species of *Anagrus* are more subtle than those met with in any other group; they are distinct enough when once seen.

the first funicle joint by at least a fourth. In *spiritus* the cephalic femora are slightly longer and broader than in the other species, as long as the cephalic tibiae. There are no colorational differences between the two species, excepting that in *incarnatus* (female only) the pedicel and first funicle joint of the antenna are pallid (white, clear), not so in *spiritus*. The species is described more in detail herewith.

Anagrus spiritus species nova.

Female:—Length, 0.65 mm.; moderately small for the family, usual in size for the genus.

General color yellowish brown (brown pink) suffused with some dusky, the abdomen with 4 or 5 transverse dusky bands across it which are not conspicuous; all appendages pallid brownish as is also the venation; the trochanters and knees pallid, the wings hyaline excepting the fore wings proximad which are suffused with dusky out as far a distance distad of the apex of the marginal vein as the latter is long, the fumation more noticeable caudad of the marginal vein. Eyes and ocelli ruby red.

Carina on the vertex present, usual; eyes reniform; abdomen slightly longer than the thorax, pointed but not noticeably or pronouncedly so.

Fore wings moderately slender, clavate, curved at about the distal third, with very long marginal cilia, the longest about twice longer than the greatest wing width (some distance back from the apex), shortening abruptly along both margins proximad of the distal third, there half shorter and from thence proximad more gradually shortening. Discal ciliation of the fore wing arranged across the widest part in about 6 longitudinal rows and between the fifth and sixth row in that part of the blade is a narrow, long elliptical bare space. Marginal vein about four and a half times longer than wide, terminating in a blunt point away from the cephalic margin and bearing three long setae. Dilatation of the fore wing caudad near base conspicuous, opposite the marginal vein. Posterior wings without discal ciliation excepting the paired row along each edge arising from between the bases of the marginal cilia.

Tibial spurs short, straight, single; none of the four tarsal joints are long; cephalic tibial spurs usual, that is longer, curved, forked at tip forming the usual strigil. Valves of ovipositor distinctly projecting a short distance beyond the end of the abdomen.

Antennae 9-jointed; scape one and a half times longer than the ped-

icel, the latter obconic, very much larger than the first funicle joint. The latter nearly globular, small, only a third the length of the second funicle joint which is the longest joint of the funicle; funicle 3 slightly shorter, 4 still somewhat shorter but widening distad; 5 and 6 subequal, slightly longer than the preceding. Club ovate, as long as the combined lengths of funicle joints 5 and 6, longer than the scape. (From 1 specimen, two-thirds inch objective, 1-inch optic, Bausch and Lomb).

Male:—The same but the abdomen is blunt at tip.

Antennae 13-jointed, filiform; joints of the flagellum gradually lengthening distad but funicle 1 is a third shorter than funicle 2; funicle 2 to 5 subequal; 6 to 9 subequal, slightly longer; 10 to 11 equal, very slightly longer; pedicel shorter than the first funicle joint. (From 2 specimens, the same objective and optic).

Described from two male and one female specimens, a pair first received from Professor C. P. Gillette mounted on a single slide labelled "Parasites found on apple twigs. Probably from eggs of Aphis pomi, 1904, S. A. J." The third specimen, a male, was received from Dr. E. P. Felt, of the New York State Museum and State Entomologist of New York, also mounted on a slide labelled, "a 1456, E. Schodack, 24, Apr., '07."

Habitat: United States—Colorado, New York (E. Schodack).

Types: Accession No. 40,809, Illinois State Laboratory of Natural History, Urbana, Illinois, one male and one female mounted on a single slide in balsam. *Cotype*—Cotype No. 13,-650, United States National Museum, Washington, D. C., one male on a slide in balsam (New York).

This species is distinguished from the common species of the genus as I find them in Illinois by its unusually long ciliation of the wings and the finer, more delicate appearance of this ciliation.

Postscript: Dr. E. P. Felt has stated to me in a letter that the male specimen received from him, as previously written above, was reared from the galls of *Dasyneura serrulata* O. S., taken on alder at East Schodack, New York, March 29, 1907, the parasites emerging the 24th of April following.

New Records of Bees: Sphecodes and Prosopis (Hym.).

By John H. Lovell, Waldoboro, Maine.

Sphecodes persimilis Lov. & Ckll.

♀.—Hampton, N. H., Sept. 12, 1909, S. A. Shaw. The specimen is a little smaller than the type, but otherwise is characteristic. The type is an unusually large bee for this genus, as it is nearly ten millimeters in length.

Sphecodes ranunculi Robt.

♀.—Hampton, N. H., June 25, 1908, S. A. Shaw; also both sexes from Elkhart, Ind., R. J. Weith. When a bee is monotropic or oligotropic, the use of the generic name of the flower, which it visits, as a specific name for the insect is, at least, descriptive and may offset the objection to a noun in the genitive; but when the bee is polytropic such names are misnomers and should be avoided.

Sphecodes confertus Say.

♀.—Hampton, N. H., May 10 and 30, S. A. Shaw. Specimens of both sexes have been collected by R. J. Weith at Elkhart, Ind.

Say states that this species was collected in Indiana. While his description is very brief and indefinite, he mentions twice that the punctures are "dense" and twice that they are "close set," a degree of punctation which applies to the mesothoracic disc of *S. falcifer* Patton much better than to that of *S. arvensis* of the same author. In the latter species the punctures are rather small and far apart, and the whole disc is smoother and more shining. *S. confertus* appears to be identical, therefore, with *S. falcifer*. The Indiana specimen before me, referred to *S. confertus* Say, has the disc of the mesothorax very densely and closely punctured so that it is nearly opaque. The female of *S. falcifer* Patton, according to the description, has the mandibles "unarmed" and the "labrum deeply emarginate." The Indiana specimen has simple mandibles and the long

labrum is notched at the apex. There seems to be no other species with which *confertus* can be identified, and I would, therefore, regard *S. falcifer* Patton as a synonym of *S. confertus* Say.

Sphecodes shawi sp. nov.

♀.—Length 6 mm. Head and thorax black; abdomen red, the apical segments tinged with black. Face finely and densely punctured, clothed with pale buff-colored pubescence; clypeus with large dense punctures; mandibles simple, red, the apices darker. Antennae black, the flagella largely red. The disc of the mesothorax finely and rather sparsely punctured, shining. Wings dusky hyaline, nervures and stigma dull ferruginous; tegulae partially red; the second submarginal cell is extremely narrow, the distance between the 1st and 2nd tranverse cubital nervures not much exceeding the width of the basal nervure. Legs black, clothed with buff-colored, plumose hairs, the apical tarsi red, exteriorly on the center of each hind tibia there is a long red spot. The enclosure on the disc of the metathorax is not well defined, coarsely reticulated. The abdomen is impunctate except for minute hair punctures.

One specimen from Hampton, N. H., June 8, 1909, S. A. Shaw. In a part of its characters this species resembles *S. pimpinellae* which has the second sub-marginal cell very short, but the latter has the mandibles bidentate, the tegulae, tibiae and tarsi red, and is 7 mm. long. The species is dedicated to Mr. S. A. Shaw, a most diligent collector of the insects of New Hampshire, and whose specimens are more carefully mounted than any others I have ever had the privilege of examining.

Sphecodes heterus sp. nov.

♀.—Length 5 mm. Head and thorax black; abdomen red, 4th and 5th segments black. Face densely and finely punctured, clothed with grayish-white pubescence; mandibles red with darker apices, bidentate; labrum long with an apical median groove; clypeus with a few sparse punctures. Antennae black, flagella brownish in front. Mesothorax shining, with rather small, sparse punctures. Wings hyaline, iridescent, nervures and stigma dark brown; tegulae testaceous. Legs black, tarsi largely dark. Enclosure on disc of metathorax large and well defined, finely reticulated, rugae small. First abdominal segment nearly impunctate, 2nd and 3rd finely punctured at extreme base.

Hampton, N. H., Sept. 9, 1909, S. A. Shaw. This species is allied to *S. levis,* but differs in the hyaline wings and the sculpturing of the metathorax; in *S. levis* the ridges are parallel.

Sphecodes paraplesius sp. nov.

♀.—length 3½ mm. Head and thorax black; abdomen red, apical segments black. Face closely and very finely punctured; mandibles yellowish-red, apices darker; clypeus shining with a few sparse punctures. Antennae black, flagella reddish. Mesothorax smooth and shining, with fine, sparse punctures. Wings hyaline, the margins clouded with dusky, nervures and stigma dark brown; tegulae reddish testaceous. Enclosure on metathorax distinct, finely reticulated. Abdomen impunctate, segments 1-3 bright red, the apical margins with yellowish reflection; apical segments black.

Kingston, R. I., June 10, received from Professor John Barlow. This species and *S. banksii* are the two smallest species of *Sphecodes* known to me. The resemblance between them is so close that I should be inclined to refer them to the same species were it not for the fact that the mandibles of *S. banksii* are simple and those of *S. paraplesius* are distinctly bidentate, which according to some taxonomists would place them in different genera. In an attempt to segregate the genus *Sphecodes* into a number of minor genera, the dentition of the mandibles has been employed as a generic character; but it does not appear well adapted for this purpose since it would separate species apparently very closely allied.

Sphecodes arvensis Patton.

♀.—Elkhart, Ind., R. J. Weith. This species is closely allied to *S. dichrous* Sm.

Sphecodes illinoensis Robt.

♀.—Elkhart, Ind., R. J. Weith. A small species with simple mandibles; enclosure on metathorax with parallel ridges.

Prosopis telepora sp. nov.

♀.—Length 4 mm. Face marks pale yellow, elliptical; the upward extensions tapering to a narrow streak along the eye margin; tubercles nearly white, collar and tegulae upspotted; tibiae in front more or less

yellow, tarsi dark. Face closely and finely punctured; clypeus impunctate except for a few minute hair punctures, marked with very fine longitudinal striae. Antennae black, flagella chestnut brown behind. Disc of mesothorax finely and very closely punctured. Wings nearly hyaline, nervures and stigma chestnut brown; tegulae black. Enclosure on metathorax well defined, with about six, short parallel rugae, the apical half without ridges but marked with minute, irregular, transverse striae. Abdomen broadly oblong, finely punctured all over, the lateral apical margins of segments 1-3 with thin fasciae.

♂.—Length 4 mm. Clypeus, supraclypeus and sides of face lemon yellow; the lateral face marks are obliquely truncated opposite the sockets of the antennae, and from the center of each there extends perpendicularly upward a narrow stripe, sometimes slightly enlarged at the end; the supraclypeal mark is longer than wide and terminates in an unnotched point between the antennae. Collar and tegulae unspotted; the tubercles are largely pale yellow; the tibiae at base exteriorly and the tarsi are yellow.

One female, May 31, and two males, April 9 and May 29, North Carolina, Southern Pines, A. H. Manee. A stout, little bee, not closely allied to any other species.

Prosopis melitina sp. nov.

♀.—Length 7½ mm. A large robust bee only surpassed in size among New England species by *P. basalis*. Black; the lateral face marks irregularly triangular, the upward extensions narrow, obliquely truncated opposite the eye sockets, lemon yellow. Collar and tegulae black; yellow spots on tubercles; anterior and intermediate legs black, but base of posterior tibiae pale yellow; tarsi dark brown. Face and mesothorax closely and rather coarsely punctured, nearly opaque. Antennae wholly black. Clypeus with large, indistinct, shallow punctures. Wings nearly hyaline, their margins slightly clouded with fuscous, nervures and stigma dark brown. Enclosure of metathorax well defined, coarsely reticulated. Abdomen oblong, stout, nearly smooth, with white apical fasciae on the extreme lateral margins of the first segment; segment 1 with microscopic hair punctures, punctures on segments 2 and 3 coarser but very fine.

Hampton, N. H., July 4, 1907, S. A. Shaw.

Prosopis ziziae Robt.

Female, August 20, male, July 19 and Sept. 5, Hampton, N. H., S. A. Shaw.

Prosopis pygmaea Cr.

Male, June 8 and July 19, Hampton, N. H., S. A. Shaw.

Prosopis variifrons Cr.

Female, July 19; male, June 6, Hampton, N. H., S. A. Shaw.

Prosopis modesta Say.

The female was taken June 25, the males, July 19 and Sept. 6, at Hampton, N. H., by S. A. Shaw. One of the males has the first abdominal segment faintly and sparsely punctured all over; but in two other specimens the disc of the first segment is impunctate. The characters of this species are very well shown in a male and female from Washington County, Wisconsin, received from Dr. Graenicher.

The Occurrence of the Mymarid Genus Anaphoidea Girault in England (Hymen.).

By A. A. Girault, Urbana, Illinois.

In a collection of beautifully prepared slide mounts of British Mymaridae, loaned to me for study by Dr. L. O. Howard, I found a pair of specimens labelled *Eustochus atripennis* which, upon more recent examination, were found to represent a species of the genus *Anaphoidea* and hence wrongly identified and labelled. The fact that these specimens were not *Eustochus* had been brought to my attention separately by both Dr. Howard and Mr. Fred. Enock, of London, more than two years ago, but their letters had been mislaid and were not found until I had reached the same conclusion independently. The specimens represent a new species which is described herewith.

Anaphoidea diana sp. n.

Female.—Length, 0.65 mm. Moderately small; normal.

Similar to the other three species of the genus but at once distinguished from the type species in being smaller, the funicle joints of the antennæ shorter, the second funicle joint of the antenna distinctly

shorter than the third, not more than twice the length of the first, in having slightly narrower fore wings and in being brown* instead of black. From *conotracheli* it differs first in being brown in color, secondly and of more importance, in having a shorter second funicle joint, not *slightly* but *distinctly* shorter than the third, also narrower and in having from 8-14 cilia in the midlongitudinal line of the posterior wings nearly as in *sordidata*. From the species *pullicrura* it differs also in being brown in color but more noticeably, as in *conotracheli*, in having the proportionally shorter second funicle joint, the longer midlongitudinal line of discal cilia in the posterior wings; also slightbroader fore wings (from 10-13 longitudinal lines of discal cilia across the widest blade portion). The male is similar to the female excepting the secondary characters of sex.

The following details are all considered necessary to add here: Color uniformly brown, the abdomen darker, the antennæ and tibiæ somewhat lighter, the trochanters, knees, tips of tibiæ and proximal three tarsal joints pallid yellowish; distal joint of club longer than the other.

Male.—The same. Antennæ 12-jointed, normal; funicle joints shorter than in *sordidata*, nearly as in *conotracheli*.

Described from one male and one female mounted in balsam on separate slides, each slide labelled, "Fred. Enock, Preparer. Order Hymenoptera, Family Mymaridae, Genus *Eustochus*, Species *atripennis*. ♂ (or ♀). A Fairy Fly. Spot lens 2-inch to ½-inch."

Habitat.—England (London or vicinity ?).

Types.—Type No. 13,663, United States National Museum, Washington, D. C.

One male, one female in balsam, two slides.

At the Massachusetts Agricultural College Dr. Guy Chester Crampton has been appointed associate professor of entomology. Dr. Crampton is a native of Alabama. He graduated from Princeton in 1904, took two years of graduate work at Cornell University, receiving his M.A. there in 1905, followed by two years at the universities of Freiburg, Munich and Berlin, where he received his Ph.D. in 1908. He was an instructor in biology at Princeton from 1908 to 1910 and since the summer of 1910 has been professor of zoology at Clemson College.—*Science.*

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* It must be taken into consideration that the specimens have been in balsam for many years and may have faded from black to brownish

A new Coccid on Ledum (Hemip.).

By T. D. A. Cockerell, Boulder, Colorado.

I have just received from Dr. E. P. Felt a small Dactylopiine Coccid collected on small twigs of *Ledum groenlandicum* (fam. Ericaceæ) at Sand Lake, N. Y., July 14, 1910. To my astonishment, it proves to belong to that section of *Pseudococcus* represented by the widely-spread tropical *P. filamentosus* (Ckll.) and *P. hymenocleae* (Ckll.) of the Arizona desert country. *Ledum groenlandicum,* according to Britton, occurs from Greenland to British Columbia, Massachusetts, New Jersey and Wisconsin. *Pseudococcus ledi* is very much like *P. filamentosus,* but differs in various details; the most noticeable peculiarity is the hump near the base of the tibia on the outer side. The legs and antennæ are very short and stout. The microscopic measurements are in microns.

Pseudococcus ledi n. sp.

♀.—Length about 2 mm., broad oval, densely covered with mealy secretion, which is strongly tinged with pale yellow; on boiling in caustic potash the insect appears dark blue-green, but the skin is colorless and transparent; antennæ and legs very pale brown; antennæ short and stout, first joint very large, last joint with both hairs and curved spines, as in the genus *Rhizoecus* (cf. Newstead, British Coccidæ, vol. 2, pl. LXIX. f. 8); antennæ 7-jointed, the joints measuring (1.) about 50 long, (2.) about 28 long and 30 wide, (3.) 25 long, (4.) 25 long, (5.) 20 long, (6.) 25 long, (7.) 63 long and 23 wide; terminal hairs of seventh joint about 28 long; so-called mentum dimerous, not elongated, about 120 long and 85 wide at base, its bristles very small; anal ring with six stout bristles, about 158 long; caudal lobes low, with bristles little longer than those of anal ring, and the usual round glands and short spine-like structures; legs very short and stout, claw stout, with a rudimentary denticle or protuberance near the base, not always evident; claw digitules well knobbed; femur with trochanter about 163; tibia about 75, humped near base; tarsus (excluding claw) about 53; width of femur 53.

Mr. Roland Trimen, F. R. S., well-known for his work on South African Lepidoptera was recently the recipient of the Darwin Medal of the Royal Society of London.

Additions and Corrections to "The Genotypes of the Sawflies and Woodwasps, or the Superfamily Tenthredinoidea" (Hymen.).

By S. A. Rohwer, Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C.

In the paper above quoted, published as Part 2, Technical Series No. 20, Bureau of Entomology, United States Department of Agriculture, March 4, 1911, certain corrections and additions are necessary.

A careful study of Panzer's "Faunæ Insectorum Germanicæ initia, oder Deutschlands Insecten gesammelt und herausgegeben," discloses the fact that some of the genera were described earlier than they had heretofore been supposed to have been. The results of this study make certain changes necessary. Certain generic names heretofore overlooked are also added. To make the work complete, with the corrections, the species should be added to the list of genotypes.

P. 73. Replace *Allantus* as it is with:
Allantus Panzer, Fauna. Insect. German. VII p. 82, T. 12, 1801.
Type: *Tenthredo* (*Allantus*) *togata* Panzer, Monobasic.
P. 74. Accredit **Astatus** to Panzer not Jurine.
P. 76. Insert following *Celidoptera*:
Cepha Billberg, Enumeratio Insectorum p. 98, 1820.
Type: *Sirex tibida* Fabricius (Monobasic).
=**Trachelus** Jurine (isogenotypic).
P. 76. Replace *Cephaleia* as it is with:
Cephalcia Panzer, Fauna. Insect. German. VIII p. 86, T. 9, 1805.
Type: *Cephalcia arvensis* Panzer.
=*Tenthredo signata* Fabricius.
Insert following *Cephalcia*:
Cephaleia Jurine, Nouv. Method. Class. Hym. p. 68, 1807.
Type: *Cephalcia arvensis* Panzer.
=*Tenthredo signata* Fabricius.
=**Cephalcia** Panzer, Isogenotypic.
P. 77. Insert following *Corynophilus*:
Cristiger Gistel, Naturgeschichte des Thierreichs p. 144, 1848.
Type: *Diprion pini* (Linnæus), Monobasic.
=**Diprion** Schrank. Isogenotypic.

P. 77. Strike out "=**Nematus** Jurine" following *Croesus* **Leach.** *Croesus,* Leach is a good genus.

Replace *Cryptus* as it is with:

Cryptus Panzer, Fauna. Insect. German. VIII p. 88, T. 17, 1805. (non Fabricius 1804.)

Type: *Cryptus segmentarius* Panzer, Monobasic.

=**Arge** Schrank.

P. 78. Replace *Dolerus* as it is with:

Dolerus Panzer, Fauna. Insect. German. VII p. 82, T. 11, 1801.

Type: *Tenthredo* (*Dolerus*) *pedestris* Panzer.

=*Tenthredo pratensis* Linnæus.

P. 79. Following *Emphytus* insert:

=**Allantus** Panzer.

Insert following *Erythraspides*:

Eudryas Gistel, Naturgeschichte des Thierreichs, p. viii, 1848.

n. n. for *Cladius* Rossi (not *Cladium* Schrader in plants).

=**Cladius** Rossi.

P. 80. After *Holcocneme* Konow insert:

=**Nematus** Panzer.

P. 84. Replace *Nematus* as it is with:

Nematus Panzer, Fauna. Insect. German. VII p. 82, T. 10, 1801.

Type: *Tenthredo* (*Nematus*) *lucida* Panzer, Monobasic.

P. 87. Following *Poecilosoma* add:

not Hübner 1816; not Stephens 1829, etc.

P. 87. Insert following *Polystichophagus*:

Polytaxonus MacGillivray, Can. Ent. vol. 40, p. 368. 1908.

Type: *Taxonus robustus* Provancher (designated).

P. 88. Insert following *Probleta*:

Prosecris Gistel, Naturgeschichte des Thierreichs p. X, 1848.

n. n. for *Poecilostoma* Dahlbom.

=**Empria** Lepelletier.

Replace *Pteronus* as it is with:

Pteronus Panzer, Fauna. Insect. German. VIII p. 87, T. 17, 1805.

Type: *Tenthredo pini* Linnæus, Monobasic.

=**Diprion** Schrank, Isogenotypic.

P. 89. Insert following *Spaecophilus*:

Sterictiphora Billberg, Enumeratio Insectorum p. 99, 1820.

Type: *Hylotoma furcata* Fabricius (designated, monobasic).

=(**Schizocera** Lepelletier 1828, isogenotypic).

P. 99. The remarks about *Croesus* Leach being a synonym of *Nematus* are incorrect. *Nematus* must date from Panzer 1801, where it is monobasic and will replace *Holcocneme* Konow. The remarks under *Nematinus* Rohwer are not in accord with these findings, but since *Nematus* Panzer must replace *Holcocneme* Konow, *Nematinus* Rohwer still replaces *Nematus* Konow.

P. 101. For Schultz read Schulz.

A New Variety of Chionobas.

By Henry Skinner, M.D., Philadelphia, Pa.

Chionobas alberta oslari n. var.

Male expands 41 mm. and the female 45 mm.

Male.—Primaries: Upperside smoky brown with a wide reddish brown band crossing the wing from near the costa to the inner margin, broken into quadrate spots by the nervures. On the first and third of these are distinct black spots or points and sometimes a faint black point on the central quadrate spot.

Primaries.—Underside yellowish brown with the upper and lower black point repeated; a black line extends from the costa to the inner margin, running parallel to the end of the discoidal cell, then bends inwardly to the lower point of the cell and thence to the inner margin. The outer end of the cell is black.

Secondaries.—Above smoky brown with margins edged with fuscous and a distinct black spot near anal angle. Below marbled with black and white with two black parallel stripes or lines crossing the wing from the costa to the inner margin; they commence near the middle of the costa about 5 mm. apart. The females are similar in markings to the males.

This variety is larger than any *alberta* I have seen. In color and markings on the upper side it very much resembles *C. katahdin*. On the under side it is the exact counterpart of *C. alberta*. It probably expresses the relationship between a mountain and a plains form. Described from two males and two females taken by E. J. Oslar in Deer Creek Canyon, Colorado, September 25, 1909. Types in collection of the Academy of Natural Sciences of Philadelphia.

Colias behri.—From observations which I made, I am inclined to believe that the natural haunts of these Alpine insects is in the high Southern Sierras and that * * * Mt. Lyell (Middle Sierras) is practically their northern range. They are not uncommon at altitudes above 10,500 feet in the Southern Sierras (you can almost say that you have reached this altitude by the abruptness with which they commence there) and may be seen on pleasant days—the usual thing there—in early July, flitting from place to place along the meadow-like margins of the Alpine streams and lakes (no true meadows are there—it has too recently recovered itself from the ice cap). I neglected to trace a female to find the food plant, but believe that it must be a species of alpine lupine, as that was the only leguminous plant there and it was quite abundant.—Edwin C. VanDyke, San Francisco, California.

A new Gomphus (Odonata).

By Richard A. Muttkowski, Public Museum, Milwaukee, Wisconsin.

Gomphus brimleyi sp. nov.

Colors olivaceous green and brown on head and thorax, yellow and black on abdomen.

♂.—Face olivaceous green, a line of pale brown at the upper end of the labrum and on the suture of nasus and frons; otherwise immaculate. Frontal ridge narrowly edged with yellow. Vertex black, the postocellar ridge each side with a rounded spot above the lateral ocellus, the two spots connected by a fine line of green. A ring of white around the base of each antenna. Occiput olive, flatly curved. Head yellow behind, a vague black stripe from the occipital edge of the eyes to the foramen, which is narrowly margined with black.

Prothorax brown above, the anterior edge lined with olivaceous green; a median geminate dorsal spot, a latero-dorsal and latero-inferior spots of olive. Posterior lobe short, straight, olive, the extreme edge lined with brown.

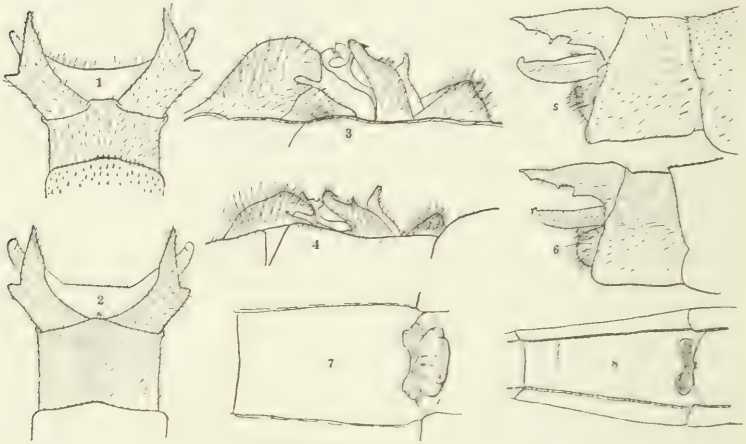
Thorax olivaceous green, marked with brown. Dorsal carina pale, a stripe of brown on each side, both coming together to a point at the antealar sinus, each stripe widening in front to twice the width at the carinal spine, but not reaching the olive collar. Antehumeral brown, narrowed above to a point, separated from the humeral by a pale stripe one half its width. Humeral as wide as the antehumeral, but widening above to twice the medial width. Sides with a stripe of brown on the first and second lateral sutures, the first as wide as the antehumeral, the second half as wide; each extending in a fine sutural line to the coxae. Interalar spaces olive, the wing bases tipped with yellow. Legs brown, the femora beneath and the tibiæ externally, olivaceous. Tarsi uniformly brown, except the first and second joints of the hind tarsi, which have a superior yellow line.

Abdomen black and yellow, olive at the sides on the basal segments. Dorsum with a well-defined line of yellow on 1 to 8, ½ mm. wide, growing brighter yellow toward the apical segments, interrupted narrowly at the joints. The line ends on 8 at two-thirds in an elongated triangle, which is continued to the apex of the segment in a very narrow line. Segments 7-9 with the extreme apex edged with yellow. Sides of 1-2, and 3 basally, with lower half olivaceous yellow, 4-6 with indeterminate yellow laterally, 7-10 with inferior half bright yellow. Segment 9 black above, 10 brown. Appendages brown, black at tips.

Appendages as long as 10. Superiors divaricate, externally truncate, an inner triangular prolongation one half the length of the appendage.

Inferiors slightly shorter, straight, the extreme apex upturned. Viewed laterally, the superior appendage angled at one half, then emarginate to three fifths, a small tubercle at the distal end of the emargination, an obtuse angle shortly before the acute apices.

♀.—Similar to the male. Occiput very flatly trilobed, the median lobe occupying the middle two fourths. Abdomen with more yellow on the sides, 10 with a vague line of yellow above. Vulvar lamina very short, one eighth the length of 9, emarginate, the lobes somewhat rounded.



Gomphus cavillaris Needham, ♂ ♀, figs. 1, 3, 5, 7.
" *brimleyi* n. sp., ♂ ♀, figs. 2, 4, 6, 8.

Wings hyaline, stigma rufous, costa green. Antenodals, fore wings 9-10, hind wings 7-8. Postnodals 6-7 on all wings. Rows of cells beyond triangle in fore wing extremely variable, some specimens having only one row to close to the level of the nodus, others having two complete rows, while some are intermediate.

Abdomen: ♂ 26-27 mm., ♀ 24-27 mm. Hind wing: ♂ 20-22 mm., ♀ 21-22 mm.

Described from four males and three females, all from White Lake, Bladen Co., North Carolina, mid-April, 1910, sent to me by Mr. C. S. Brimley. ♂ holotype, ♀ allotype, and paratype ♂ and ♀ in collection Milwaukee Public Museum. The remaining three paratypes in collection Brimley.

In a recent letter Mr. Brimley writes: "The *Gomphi* were all collected by Mr. Franklin Sherman, our State Entomologist, in open pine woods, near the banks of White Lake in Bla-

den County. He says that they frequented the more open spots in the woods, settling on the ground. Years ago he and I collected some of the same species at Lumberton, along the banks of the Lumber River and in the adjoining mixed woods. These last acted in the same manner as *G. exilis* and *sordidus;* that is to say, they kept in the woods, settling on the ground in open spaces, but not flying out over the river.

"I have also a spread specimen from Southern Pines, making three localities (Southern Pines, White Lake and Lumberton), all in southeastern North Carolina, from which we have had this species."

With great pleasure I dedicate this new *Gomphus* to Mr. C. S. Brimley, the collector, whose painstaking collections have furnished the basis for frequent Odonatological notes by various authors.

This is the smallest *Gomphus* known.* It is closely related to *G. cavillaris* Needham, but undoubtedly distinct. Besides its smaller size, it can be readily recognized by the well defined line of yellow on a black background on the abdomen—vague and on a brown background in *cavillaris.* The appendages of the ♂ are narrower and the prolongation more attenuated than in *cavillaris.* The ♀ vulvars are rounded, the emargination not angled; angulate, and the emargination angled in *cavillaris,* as can be readily seen from the figures. (The vulvars of *G. cavillaris* are somewhat overdrawn, as their true proportion to the length of the segment is 1:10).

THE CURCULIONIDS of the *Biologia Centrali-Americana,* worked out by Mr. G. C. Champion, have been presented by Dr. F. D. Godman to the British Museum of Natural History; they number 2,617 species and about 19,000 specimens. Mr. Champion is now working at the remainder of the Curculionids (Otiorhynchids) commenced by Dr. David Sharp, and hopes to get through them this summer. This will finish the whole of the Coleoptera of the *Biologia.*

[*The dimensions given for *Gomphus naevius* Hagen, from Maine, by the late Professor F. L. Harvey, are smaller than those here stated for *G. brimleyi.* See Ent. News, IX, p. 63, 1898.—P. P. C.]

Endaphis hirta n. sp. (Dipt.).

By E. P. Felt, Albany, N. Y.

The species described below was reared by Mr. E. E. Green in June, 1894, from a *Dactylopius* on *Mimusops hexandra,* Tangalla, Ceylon, and transmitted to Dr. L. O. Howard, through whose courtesy we are permitted to describe it, under date of December 3, 1895. The form is so unique that we feel justified in describing it though the specimen is in poor condition.

Male.—Length 1.5 mm. Antennæ as long as the body, thickly haired, light fuscous yellowish, yellowish basally; 14 segments, the first broadly obconic, somewhat excavated and with a slight tooth dorsally, the second short, subhemispheric, the third slightly fused with the fourth, the fifth binodose, the basal portion of the stem with a length a little greater than its diameter, the distal part with a length twice its diameter; basal enlargement a very oblate spheroid; the subbasal whorl very thick, the setæ long, stout and almost approximate basally; the circumfili stout, the loops numerous and extending nearly to the base of the practically identical distal enlargement; terminal segment having the basal enlargement subglobose, the basal portion of the stem with a length nearly twice its diameter, the distal enlargement slightly produced, with a length about ¾ its diameter and with a short, stout apical appendage. Palpi yellowish, the first segment subrectangular, the second narrowly oval, the third a little longer and more slender, the fourth as long as the third, somewhat dilated. Mesonotum fuscous yellowish. Scutellum and postscutellum yellowish. Abdomen fuscous yellowish. Wings thickly clothed with long, scale-like hairs. Costa yellowish brown, subcosta uniting therewith near the basal third, the third vein well before the apex. Halteres yellowish transparent, fuscous apically. Coxæ yellowish, femora fuscous yellowish, tibiæ and tarsi mostly fuscous. Claws very strongly curved, probably simple, the pulvilli not visible in the preparation. Genitalia wanting.

Type in the United States National Museum.

This species is easily differentiated from all other forms known to the writer by the extremely thick sub-basal whorl of long, stout setae on the enlargements of the flagellate segments. These setae are so numerous as to be almost approximate basally and arranged in a practically straight row.

Dr. Samuel H. Scudder has been elected a foreign member of the Zoological Society of London.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, four weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form and without covers, will be given free, when they are wanted; if more than twenty-five copies are desired, this should be stated on the MS. The receipt of all papers will be acknowledged. Proof will be sent to authors for correction only when specially requested.—Ed.

PHILADELPHIA, PA., MAY, 1911.

DESTROYING THE GYPSY MOTH.

Dr. W. E. Britton, State Entomologist of Connecticut, in his report for the year 1910, gives a most interesting account of his efforts to rid the State of the Gypsy Moth, discovered at Wallingford in December, 1909. It is to be hoped that he has eradicated this terrible pest in the locality mentioned. The work was thoroughly done and nothing omitted that knowledge and experience of the subject made possible.

"While working in a tree, one of the men, Mr. R. W. Bolton, observed a Gypsy caterpillar crawling along a telephone cable which passed between the branches of the tree. This method of spreading may account for the caterpillars appearing in certain trees where all egg-masses had been destroyed and a tanglefoot band placed around the trunk. Telephone wires passed directly from infested trees into these described." One egg-mass was said to contain 1,485 eggs.

A summary of the work may prove interesting. Egg-masses destroyed, 8234; trees banded with burlap, 10,000; trees banded with tanglefoot, 365; trees pruned, 904; cavities filled with cement, 27; cavities covered with tin patches, 1959; caterpillars destroyed at burlap bands, 8936; cocoons destroyed, 95; number of trees found infested, 248; amount of lead arsenate used, pounds, 768; tanglefoot used, pounds, 120; burlap used, yards, 2493; number of men employed, maximum, 18; cost of the work at Wallingford, $3823.24.

If these insects had been left to their own devices the next generation of moths would have produced over two hundred millions of caterpillars.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

CICINDELA UNICOLOR Dej.—Mr. Edw. D. Harris writes from Camden, South Carolina, under date of March 19, "I am taking very fine specimens of this species here."

A SPECIAL COMMISSION, to be despatched by the British South Africa Company to investigate sleeping sickness in Rhodesia, will include Mr. O. Silverlock as entomologist.—SCIENCE.

THE article entitled "A Day with Euchloe cethura," published in the NEWS for January, 1911, page 11, should be credited to Messrs. Karl R. Coolidge and Victor L. Clemence as joint authors, and not to Mr. Coolidge alone.

DR. W. J. HOLLAND, director of the Carnegie Institute, Pittsburgh, author of the *Butterfly Book*, the *Moth Book* and numerous other works on Lepidoptera, has received from the Czar of Russia, the insignia of a knight of the order of St. Stanislas, second class, in recognition of his services to science.

DOG AND CAT FLEAS NOT IDENTICAL.—At the meeting of the Entomological Society of London, on Nov. 16, 1910, the Hon. N. C. Rothschild exhibited examples of two species of fleas, *Ctenocephalus canis* (dog flea) and *C. felis* (cat flea), and stated that, although still frequently considered to be identical, they were really quite distinct species. Under the microscope it was seen that whereas the head of the dog flea was rounded, that of the cat flea was long and flat. The two had been united by Dr. Taschenberg under the name of *serraticeps*, a name which most certainly could not be retained.

TIMETES.—Since the publication of the note on *Timetes peleus*, on page 111, of the NEWS for March, 1911, I have received additional information from Mrs. Annie Trumbull Slosson and Mr. Philip Laurent. Mrs. Slosson writes as follows: "Your note on *Timetes* interests me. I have recognized but one species in Florida and that you identified for me as *eleucha* years ago. I am sending you three specimens. Their habit of flight is so peculiar that they are difficult to capture. They fly very high in the tops of the highest trees, rarely coming lower and their thin, delicate, fragile tails break so easily that it is hard to secure perfect specimens."

I was in error in calling the specimen *eleucha* that Mrs. Slosson sent me from Biscayne Bay, Florida. Mr. Laurent says he found the species very common south of Miami, Florida. The specimens he has sent me were taken on various days during the month of March. Mr. Laurent says that all he took were more or less damaged. All of these specimens were *peleus* Sulz. (*petreus* Cramer).—HENRY SKINNER.

Platypsylla castoris Rits. in California.—Prof. Joseph Grinnell, of the Museum of Vertebrate Zoology in Berkeley, has been kind enough to send me a bottle with 46 specimens of this curious beetle. The bottle had the following label: "Taken from fur around nose and face of Beaver (Castor canadensis) from Graycom, Stanislaus Co., Calif. (on San Joaquin R.) March 25, 1911."

Dr. A. Fenyes, of Pasadena, California, recently elected a Fellow of the Entomological Society of London, has presented four boxes containing an admirable collection of North American Aleocharinae (Coleoptera) to the Society which, in the absence of any collections belonging exclusively to the Society, have been transferred to the British Museum of Natural History.—Entomologist (London), January, 1911.

I shall be pleased to exchange specimens of this interesting species for beetles of the Staphylinid subfamily Aleocharinae, in which latter group I am especially interested.—Adalbert Fenyes, M.D., Pasadena, California.

Miastor larvae.—These remarkably interesting larvae, reproduced by pedogenesis, are available for laboratory work to a marked degree and must be widely distributed as well as allied forms. Very little is known concerning American species, largely because their habitat is one rarely explored by entomologists. They breed mostly in decaying vegetable matter. We have been very successful in finding them under partially decayed chestnut bark of stumps, fence rails and sleepers which have been cut one or two years earlier. European species have been observed under the bark of a variety of trees and even in sugar beet residue. These Dipterous maggots with diverging antennae have a flattened, triangular head quite different from the strongly convex, usually fuscous head of the *Sciara* larvae occurring in a similar environment. They have a length of from 1-20 to ⅛ of an inch and may be found in colonies containing a few large, white larvae with numerous smaller, yellowish individuals, though the latter appear more common at the present time. Early spring with its abundance of moist bark appears to be the most favorable season for finding the larvae. The writer would welcome the co-operation of entomologists and others in searching for these forms in different parts of the country. He will be pleased to determine specimens found under various conditions, make rearings therefrom if possible, and thus add to our knowledge of the sub-family Heteropezinae, a group which should be fairly abundant in North America and one deserving careful study.—E. P. Felt, State Entomologist's Office, Albany, N. Y.

[Dr. Felt has published a more extended note on *Miastor* larvae in *Science* for Feb. 24, 1911, page 302.—Ed.]

A NEW HEMILEUCA.—At the November 21st, 1910, meeting of the Manchester (England) Entomological Society, as reported in the *Entomologist* (London) for January, 1911, Mr. J. H. Watson exhibited "a new moth belonging to an aberrant group of the Saturnidæ (*Hemileuca* sp.) allied to *H. neumoegeni* (H. Edwards), the specimens bred from pupæ collected in the neighborhood of the Truckee Pass, on the California-Nevada divide of the Rocky Mountains."

FLIES AND DISEASE.—At the December, 1910, meeting of the newly organized Helminthological Society of Washington, Dr. C. W. Stiles discussed the subject of rural sanitation with special reference to the disposal of fæces. In comparing the relative merits of the dry and wet systems of disposal, he said: "Flies feed and breed in the dry system. In one place about 80 privies were examined. Although lime was furnished free, it was only used generously in three cases, and flies were breeding in these places as in the others. The fæces are collected in wagons and buried; burial under a foot of soil being recommended. The carts carry and distribute flies. Experiments showed that flies developed and crawled up to the surface from fly-blown fæces buried under six and a half inches of sand; they came through 17 inches in 24 hours; and flies issued after burial under 48 inches of sand. Flies were obtained even after burial under six feet of sand. In the last two cases, the sand used was not sterilized but was pure sand carefully selected. These are final arguments against the dry system. The system favors the sporulation of amœbæ. Flies can bring to the surface and distribute amœbæ spores or typhoid bacilli. Under some circumstances privies may be more important than the manure piles as breeding places for flies."—SCIENCE, Feb. 3, 1911.

EXHIBITION OF MODELS OF MEMBRACIDAE.—At the meeting of the New York Academy of Science, Section of Biology, Dec. 12, 1910, Mr. Ignaz Matausch exhibited a series of six enlarged models in wax which he had prepared for the American Museum of Natural History, as well as a series of twenty-three colored drawings and a collection of typical specimens which had been sent him by Professor F. Silvestri, of Portici, Italy. The Membracidæ, or tree-hoppers, are among the most interesting of insects. Very little is yet known concerning their life histories, a subject to which the speaker said he had devoted considerable attention. They are remarkable for their extraordinary variation in the form of the prothorax. In order to make an enlarged model it is necessary to dismember the insect and to prepare drawings of the different parts to a selected scale. The separate parts are then copied in clay; plaster molds are then prepared and casts made in wax. These are then finished, the details put in, and the whole put together and colored.—*Science.*

Possible Causes of Local Distribution of Odonata.—[The following suggestion occurs in a recent letter.] I want to get more observations on our old gravel pits especially. They offer a great opportunity, but my time has always been too limited to avail myself of it. I believe, however, that these old pits have a richer dragonfly fauna a few years after they are abandoned, than they have in later years. The dragonflies reach the ponds first—their enemies or checks of some sort come later. This may go a long way to explain the uniformity of odonate life in old marshes—such as coastal brackish marshes—a few widely distributed species—a dead level of adaptation—no ebb or flow of new odonate life across it. In the newly made pools (ox bow bends, bayous, pools at foot of cliffs along rivers, pools in parks, gravel pits, etc.) occur the rarer (*i. e.*, more isolated, scattered) species to last a greater or lesser number of years and give way to a few common, widely distributed species. I don't mean that the common widely distributed species necessarily drive away the others—possibly in later years fish get established in the ponds, and the first dragonfly occupants are checked or exterminated by fish, which do not prey on later arrivals.—E. B. Williamson, Bluffton, Indiana.

The Life History of Atteva Aurea Fitch.—It was at the later part of August when I was out collecting, that my attention was called to a web which looked to me like a spider's nest, on a small ailanthus bush. By investigating more closely, I saw a chrysalis suspended in the web. Not knowing what it was, I took it home, and several days after, a small moth emerged and proved to be *Atteva aurea*. As I knew the food plant now, I looked in the same neighborhood and found several similar webs containing newly hatched, as well as full grown, larvae and also chrysalids in them. The full grown larva is about 1¼ inches long, blackish, with a distinct brown stripe all along its back, while the sides are dotted with fine white spots. When disturbed the larva moves quite actively in the web. Looking for eggs, I found some attached to the web, distributed half an inch apart from each other, and this method of laying the eggs very likely accounts for the finding of newly-hatched caterpillars, as well as full grown larvae in the same web. The larva turns into a chrysalis in the same web. Previously to finding these, I occasionally took the moths in July, sitting on the flowers of the button ball bush, iron weed, etc., but never later. But this proves that the moths must be double brooded around Philadelphia, as all the moths hatched in September and October. As far as I could find out, there is no record as to food plant or life history of this little moth, but should any other collectors have made any observations in this respect, I would like to hear from them.—Carl Ilg, 2728 Somerset St., Philadelphia.

Dinner in Honor of Mr. D. K. McMillan.—The departure from Brownsville, Texas, of Mr. D. K. McMillan, Bureau of Entomology, was the occasion of a farewell dinner given in his honor by other entomologists stationed there. Matamoros, Mexico, just across the river from Brownsville, was the scene of the entertainment, which was held on the night of March 8, 1911. The dinner was given in the French restaurant, and was followed by a theatre and "Boliche" party. Mr. McMillan was engaged in truck crop insect investigations in the Brownsville country. He will go North to take a position in Illinois under Dr. Forbes, and will investigate insects injurious to vegetables in the vicinity of Chicago. Besides the guest of honor, the following were present: Mr. R. A. Vickery, of the Cereal and Forage Crop Insect Investigations, Bureau of Entomology; Mr. M. M. High, of the Truck Crop and Stored Product Insect Investigations, Bureau of Entomology, and Mr. T. E. Holloway, at present on furlough from the Bureau and engaged in parasite investigations for the Deli Experiment Station, of Sumatra.

The Mershon Expedition to the Charity Islands, Lake Huron.—For several years the University of Michigan Museum and the Michigan Geological and Biological Survey have been co-operating in a biological survey of the State. The survey has had a small annual appropriation for this work, and has deposited the collections in the museum, but the expeditions sent out from the latter have nearly all been made possible by gifts from persons interested in the progress of the work or in the institution.

In the summer of 1910, Hon. W. B. Mershon, Saginaw, Mich., placed in the hands of the chief field naturalist of the survey, who is also the head curator of the museum, a sum sufficient to send a small party to the Charity Islands in Saginaw Bay, for the purpose of investigating the fauna and flora.

The men engaged to do the work and the groups to which they devoted most of their time were as follows: W. W. Newcomb (butterflies and moths), N. A. Wood (vertebrates), A. W. Andrews (beetles), Frederick Gaige (ants), C. K. Dodge (plants). The museum and survey are greatly indebted to these men, for they did the field work without other remuneration than their expenses, and are now preparing their results for publication.

The results of the expedition will be published in various journals and in the annual reports of the Michigan Academy of Science under the common title "Results of the Mershon Expedition to the Charity Islands, Lake Huron." As most of the field work was done in the late summer and fall, the survey plans to continue the work in the spring and early summer of 1911.—Alexander G. Ruthven, University of Michigan Museum (in *Science*).

COLIAS NASTES STRECKERI Gr. Grum-Grshimailo.—Mr. Henry H. Lyman has sent me the following: "I see in your supplement* a reference to a species *streckeri* described by Grote. Has his description ever been published in any American journal? If not, I wish you would get the editor of the ENTOMOLOGICAL NEWS to re-publish this description in English, if the original description was in any other language, as I know nothing of this form." Gr. is the abbreviation used for Gr. Grum-Grshimailo and Mr. Lyman can't be blamed for taking it to stand for Grote. The International Entomological Congress, I believe, has a project on foot to adopt a uniform plan for authors' names.

We have three specimens of *Colias nastes* in our collection, taken in the vicinity of Laggan, Alberta, by Mr. Thomas E. Bean. Mr. Bean also supplied Strecker with the material that found its way to Europe. I have compared our Canadian *nastes* with specimens from Europe and do not find any difference. In my opinion they do not deserve even a varietal name.—HENRY SKINNER, M.D.

[The original description by Gr. Grum-Grshimailo was published in Horae Societatis Entomologicae Rossicae 29,290, 1895, and is as follows:

"*Colias Nastes* var. *Streckeri.*

Forma ad. *Col. cocandicam* transitum efficiens.

Alae ♂ ♀ virescenti-sulphureae; anticarum limbo externo latiore, disco in nervis rarius nigrescenti-consperso; posticarum macula discocellulari supra lurida, subtus permagna ad marginem externum ut in *Col. eogene* et *cocandica* bidentata rufa.

Specimen unum hujus varietatis sub nomine *'Colias behrii?'* a lepidopterologo germanico D-re O. Staudinger anno 1891, quattuor specimina, in provincia Alberta ad Laggan collecta, a lepidopterologo americano Dom. H. Strecker, cujus in honorem hanc forman nominavi, accepi."

This may be rendered into English as follows:

Colias nastes var. *streckeri.* A form transitional to *C. cocandica.* Wings ♂ ♀ greenish-sulphur; external margin of the primaries wider, veins in the disc more thinly sprinkled with blackish; discocellular spot of the secondaries lurid above, below very large at the external margin bidentate reddish as in *C. eogene* and *cocandica.*

I received one specimen of this variety under the name *"Colias behrii?"* from the German lepidopterologist, Dr. O. Staudinger in 1891, and four specimens, collected at Laggan in the province of Alberta, from the American lepidopterologist, Mr. H. Strecker, in whose honor I have named this form.]

*A Synonymic Catl. North Am. Rhop. Suppl. No. 1. Publ. by American Entomological Society.

NEW YORK STATE ENTOMOLOGIST'S OFFICE NOT DAMAGED.—[We are very glad to publish the following reply from Dr. Felt to our inquiry concerning the fire in Albany.—ED.]

April 3, 1911.

Thank you very much indeed for your query in regard to the recent fire in the State Capitol.

The office of the State Entomologist is in Geological Hall and therefore was not directly affected by the recent disastrous fire in the State Capitol. Unfortunately, we depend largely upon the reference works in the [State] library [in the Capitol] and it is probable that our bibliographic work will be seriously hampered for some months to come. It is gratifying to state that the office library, exceptionally efficient along economic lines in particular, escaped intact.—E. P. FELT, State Entomologist.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (*) following a record, denotes that the paper in question contains description of a new North American form.

For record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

4—The Canadian Entomologist. **5**—Psyche, Cambridge, Mass. **6**—Journal, New York Entomological Society. **7**—U. S. Department of Agriculture, Bureau of Entomology. **8**—The Entomologist's Monthly Magazine, London. **9**—The Entomologist, London. **10**—Nature, London. **11**—Annals and Magazine of Natural History, London. **14**—Proceedings, Zoological Society of London. **22**—Zoologischer Anzeiger, Leipzig. **35**—Annales, Societe Entomologique de Belgique. **38**—Wiener Entomologische Zeitung. **40**—Societas Entomologica, Zurich. **50**—Proceedings, U. S. National Museum. **62**—Handlingar, Konglige Svenska Vetenskaps-Akademiens, Stockholm. **64**—Annalen, K. k. Naturhistorischen Hofmuseums, Wien. **69**—Bolletino, Societa Italiana Entomologica. **81**—Biologisches Centralblatt, Erlangen. **90**—Revue Scientifique, Paris. **97**—Zeitschrift fur wissenschaftliche Zoologie, Leipzig. **123**—Bulletin, Wisconsin Natural History Society, Milwaukee. **143**—Ohio Nat-

uralist. **148**—New York Agricultural Experiment Station, Geneva. **163**—American Journal of Science, New Haven, Conn. **172**—The American Museum Journal, New York. **180**—Annals, Entomological Society of America. **182**—Revue Russe d'Entomologie, St. Petersburg. **184**—Journal of Experimental Zoology, Philadelphia. **186**—Journal of Economic Biology, London. **193**—Entomologische Blatter, Nurnberg. **196**—Arkiv for Zoologie, Stockholm. **198**—Biological Bulletin, Marine Biological Laboratory, Woods Hole, Mass. **200**—Bulletin Scientifique de la France et de la Belgique, Paris. **216**—Entomologische Zeitschrift, Stuttgart. **227**—Memorias, Instituto Oswaldo Cruz, Rio de Janeiro. **240**—Maine Agricultural Experiment Station, Orono. **248**—Hawaii Agricultural Experiment Station, Honolulu. **259**—Publications, Carnegie Institution of Washington. **279**—Jenaische Zeitschrift fur Naturwissenschaft, Jena. **284**—Bulletin, Museum National d'Histoire Naturelle, Reunion Mensuelle des Naturalistes du Museum, Paris. **317**—Mitteilungen der Naturwissenschaftlichen Gesellschaft in Winterthur. **318**—Proceedings of the Davenport Academy of Sciences. **319**—Annual Report and Transactions of the Manchester Entomological Society, Manchester (England). **320**—Der Tropenpflanzer, Berlin. **321**—Annals of the New York Academy of Sciences. **322**—Journal of Morphology, Philadelphia. **323**—Annales de l'Universite de Lyon. Nouvelle serie. I. Sciences, Medecine. **324**—Journal of Animal Behavior, Cambridge, Mass. **325**—Skandinavisches Archiv fur Physiologie, Leipzig.

GENERAL SUBJECT. Anon.—Insect and fungoid pests (review of work done, etc.), **10,** lxxxvi, 161-162. **Fullaway, D. T.**—Insects attacking the sweet potato in Hawaii, **248,** Bull. No. 22, 9-31. **Hartzell, F. Z.**—A preliminary report on grape insects, **148,** Bul. No. 331, 485-581. **Kirchner, O. von.**—Blumen und Insekten. Ihre Anpassungen aneinander und ihre gegenseitige Abhangigkeit. 436 pp. Leipzig und Berlin. B. G. Teubner, 1911. **Pearse, A. S.**—The influence of different color environments on the behavior of certain arthropods, **324,** i, 79-110. **Picado, C.**—Documents sur le mimetisme recueillis en Costa-Rica, **200,** xliv, 89-108. **Preuss, P.**—Ueber Schadlinge der Kokospalme, **320,** xv, 59-91. **Rosa, D.**—L'opera zoologica di E. H. Giglioli, **69,** xli, 19-27. **Washburn, F. L.**—13th Report of the state entomologist of Minnesota to the governor for the years 1909-1910. 184 pp.

APTERA AND NEUROPTERA. Alderson, E. M.—Notes on Chrysopa dorsalis, **8,** xxii, 49-54. **Atmore, E. A.**—Further Notes on Chrysopa dorsalis, **8,** xxii, 54-56. **Escherich, K.**—Termitenleben auf Ceylon. Neue Studien zur Soziologie der Tiere, zugleich ein Kapitel kolonialer Forstentomologie. Jena. Gustav Fischer, 1911.

262 pp. **Handlirsch, A.**—New paleozoic insects from the vicinity of Mazon Creek, Illinois (cont.), **163,** xxxi, 297-326 (*). **Jones & Horton.**—The orange thrips (Euthrips citri): A report of the progress for the years 1909 and 1910, **7,** Bull, No. 99, pt. i, 16 pp. **Muttkowski, R. A.**—Miscellaneous notes and records of dragon flies, **123,** viii, 170-179 (*). **Rimsky-Korsakow, M.**—Ueber die systematische Stellung der Protura, **22,** xxxvii, 164-168. **Schmutz, K.**—Zur Kenntnis einiger neuen Thysanopterengenera (Tubilifera), **64,** xxiii, 273-281, 342-347. **Wolley Dod, F. H.**—Habits of Smerinthus geminatus and cerisyi, **4,** xliii, 104. **Zawarzin, A.**—Histologische Studien ueber Insekten. I. Das Herz der Aeschnalarven, **97,** xcvii, 481-510.

ORTHOPTERA. Borelli, A.—Mission geodesique de l'equateur. Forficulides, **284,** 1910, 156-158. **Jensen, J. P.**—The structure and systematic importance of the spermatophores of crickets, **180,** iv, 63-66. **Pocock, R. I.**—Remarks upon, and exhibition of two drawings illustrating an instance of ant-mimicry by the larvae of a species of Mantis; with a note on the mimicry of the larva of the Ceylonese Leaf-insect (Phyllium sp.?), **14,** 1910, 837-840. **Zacher, F.**—Studien ueber das System der Protodermapteren, **22,** xxx, 303-400.

HEMIPTERA. Barber, H. G.—Descriptions of some new Hemiptera-Heteroptera, **6,** xix, 23-31 (*). **Bedau, K.**—Das Facettenauge der Wasserwanzen, **97,** xcvii, 417-456. **Bergroth, E.**—New Neotropical Ploeariinae, **5,** xviii, 15-20. **Distant, W. L.**—Rhynchotal notes, LIII: Neotropical Pentatomidae, **11,** vii, 242-258. **Fullaway, D. T.**—Description of a new Coccid species, Ceroputo ambigua, with notes on its life-history and anatomy, **318,** xii, 223-240 (*). **Gadd, G.**—Contributions a l'anatomie comparee des cigales et de Tettigonia viridis (Russian), **182,** x, 205-213. **Hodgkiss, H. E.**—The apple and pear membracids, **148,** Tech. Bul., No. 17, 81-112. **Muir & Kershaw.**—On the homologies and mechanism of the mouth-parts of Hemiptera, **5,** xviii, 1-12. **Neiva, A.**—Beitraege zur Biologie des Conorhinus megistus, **227,** ii, 207-212. **Wilson, H. F.**—Notes on the synonymy of the genera included in the tribe Lachnini, **180,** iv, 51-54.

LEPIDOPTERA. A. L.—Les diverses especes de Vers a Soie, **90,** xlix, 184. **Barnes & McDunnough.**—Additions to list of Sphingidae of America, north of Mexico, **5,** xviii, 34. **Coolidge, C. R.**—Western Lepidoptera, IV, **5,** xviii, 32-34. **Druce H.**—Descriptions of some n. sp. of Heterocera from tropical South America, and two n. sp. of Geometridae from West Africa, **11,** vii, 287-294. **Herrick, G. W.**—Notes on the life-history of the larch case-bearer (Coleophora laricella), **180,** iv, 68-70. **Johnas, W.**—Das Facetten-

auge der Lepidopteren, **97,** xcvii, 218-261. **Newcomer, E. J.**—The life histories of two Lycaenid butterflies, **4,** xliii, 83-88. **Nurse, C. G.**—The duration of the larval stage in some of the Sesiidae, **9,** xliv, 94-95. **Peterson, E.**—Beitrage zur Anatomie und Histologie des Darmkanals der Schmetterlinge, **279,** xlvii, 161-216. **Schaus, W.**—New species of Heterocera from Costa Rica, VI, **11,** vii, 262-286. **Stierlin, R.**—Der Kiefernspinner als Waldverwuester, **317,** 1910, 14-24. **Strand, E.**—Notes on the cocoons and descriptions of four n. sp. of the genus Trichostibas, **11,** vii, 237-241. **Swett, L. W.**—Geometrid notes on the genus Hydriomena, **4,** xliii, 73-82. **Verson, E.**—Beitrag zur naheren Kenntnis der Hautung und der Hautungsdrusen bei Bombyx mori, **97,** xcvii, 457-480. **Watson, J. H.**—Notes on the life histories of certain species of the Saturnidae. Description of a new species of Hemileuca from western Nevada, **319,** 1910, 22-34 (*).

DIPTERA. Aldrich, J. M.—Meigen 1800 once more, **4,** xliii, 108. **Austen, E. E.**—On the occurrence in N. Am. of the European Eristalis oestraceus, **8,** xxii, 63-64. **Chittenden, F. H.**—The Asparagus Miner (Agromyza simplex), **7,** Circ. No. 135, 5 pp. **Coquillett, D. W.**—Ueber die Nomenklatur der Acalyptratengattungen nach Th. Beckers Katalog der palaarktischen Dipteren. Bd. 4, **38,** xxx, 62-64. **Felt, E. P.**—A generic synopsis of the Itonidae, **6,** xix, 31-62 (*). Summary of food habits of Amer. gall midges, **180,** iv, 55-62. **Fulton, B. B.**—The Stratiomyidae of Cedar Point, Sandusky, Ohio. **143,** xi, 299-301. **Handlirsch, A.**—Zur Phylogenie und Flugelmorphologie der Ptychopteriden, **64,** xxiii, 262-272. **Hendel, F.**—Ueber von Prof. J. M. Aldrich erhaltene und einige andere amerikanische Dipteren, **38,** xxx, 19-46 (*). **Herms, W. B.**—The photic reactions of Sarcophagial flies, especially Lucilia caesar and Calliphora vomitoria, **184,** x, 167-226. **Hine, J. S.**—A new species of Nothomyia, **143,** xi, 301-302 (*). **Holmes, S. J.**—The reactions of mosquitoes to light in different periods of their life history, **324,** i, 29-32. **Johannsen, O. A.**—The typhoid fly and its allies, **240** (University of Maine. Four insect pests. Pamphlet 401-1-11), 24 pp. **Krogh, A.**—On the hydrostatic mechanism of the Corethra larva with an account of methods of microscopical gas analysis, **325,** xxv, 183-203. **Lutz, A.**—Zweiter Beitrag zur Kenntnis der brasilianischen Simuliumarten, **227,** ii, 213-267. **Lutz, F. E.**—Flea carriers of the plague, **172,** xi, 95-98. Experiments with Drosophila ampelophila concerning evolution, **259,** No. 143, 40 pp. **Massonnat, E.**—Contribution a l'etude des pupipares, **323,** Fasc. 28, 388 pp. **Moenkhaus, W. J.**—The effects of inbreeding and selection on the fertility, vigor and sex ratio of Drosophila ampelophila, **322,** xxii, 123-154. **Patterson T. L.**—Investigations into the habits of certain Sarcophagi-

dae, **7**, Tech. Ser., No. 19, pt. 3, 25-32 pp. **Shipley, A. E.**—Rat fleas, **186**, vi, 12-20. **Stevens, N. M.**—Further studies on heterochromosomes in mosquitoes, **198**, xx, 109-120. **Thienemann, A.**—Das Sammeln von Puppenhauten der Chironomiden, **40**, xxv, 99-100.

COLEOPTERA. Aurivillius, C.—Neue oder wenig bekannte Coleoptera Longicornia, **196**, vii, No. 3, 44 pp. **Bowditch, F. C.**—Notes on Diabrotica and descriptions of new species, **4**, xliii, 89-97. **Champlain, A. B.**—Some Carabidae taken in Connecticut, **5**, xviii, 35-36. **Chittenden, F. H.**—A list of insects affecting stored cereals, **7**, Bull. No. 96, pt. 1, 18 pp. **Fassl, A. H.**—Tropische Reisen, III. Die Erforschung des Monte Tolima, **216**, xxiv, 263-264, 267-268. **Girault & Zetek.**—Further biological notes on the Colorado potato beetle, Leptinotarsa 10-lineata, including observations on the number of generations and lengths of the period of oviposition. II, Illinois, **180**, iv, 71-83. **Jordan, H.**—Die Wirkungsweise der Mundwerkzeuge bei Seidenraupen, **81**, xxxi, 111-114. **Kerremans, Ch.**—Monographie des Buprestides (Damarsila), v, 257-320. **Kleine, R.**—Biologische Beobachtungen an Pyrochroa coccinea (Schluss), **193**, vii, 62-66. **Leng, C. W.**—A new species of Dineutes, **6**, xix, 11 (*). Notes on Coccinellidae, IV. Variable maculation, **6**, xix, 6-10. **Pic, M.**—Mission geodesique de l'equateur. Ptinides, Anthicides, et Hylophilides, **284**, 1910, 154-156. **Volker, H.**—Ein Sonderling aus der Kafergilde, **193**, vii, 44-47. **Weise, J.**—Dritter Beitrag zur Kenntnis der Hispinen, **35**, lv, 39-78.

HYMENOPTERA. Adlerz, G.—Lefnadsforhallanden och instinkter inom familjerna Pompilidae och Sphegidae III, 62, xlv, No. 12, 75 pp. **Brues, C. T.**—Notes on some genera of Ophioninae with toothed femora, **5**, xviii, 21-26 (*). **Cockerell, T. D. A.**—Descriptions and records of bees, **11**, vii, 225-237 (*). Bees in the collection of the U. S. National Museum, **50**, xxxix, 635-658 (*). **Crawford, J. C.**—Descriptions of new Hymenoptera, I, **50**, xxxix, 617-623 (*). **Ducke, A.**—Terzo supplemento alla revisione dei Crisididi dello stato Brasiliano del Para, **69**, xli, 89-115. **Girault, A. A.**—Descriptions of three new North American species of the mymarid genus Polynema parasitic on membracid eggs, with a list of the sp. described since 1898, **6**, xix, 12-23 (*). **Graenicher, S.**—New Zealand's experience with the red clover and bumblebees, **123**, viii, 166-169. **Kieffer, J. J.**—Nouveaux Cynipides exotiques du British Museum de Londres, **69**, xli, 244-254. **Krausse-Heldrungen, A. H.**—Enbiontische Fahigkeiten bei Insecten, **69**, xli, 84-87. **Mann, W. M.**—Notes on the guests of some Californian ants, **5**, xviii, 27-31 (*). **Pietschker, H.**—Das Gehirn der Ameise, **279**, xlvii, 43-114. **Rohwer, S. A.**—The genotypes of the sawflies and woodwasps, or

the superfamily Tenthredinoidea, **7,** Tech. Ser. No. 20, pt. 2, 69-109 pp. **Santschi, F.**—Formicides recoltes par Prof. F. Silvestri aux Etats Unis en 1908, **69,** xli, 1-7. **Stenton, R.**—On the economy of the ichneumonid Monoblastus palustris, **9,** xliv, 87-90. **Strand, E.**—Eine echte Eucera von Sudamerika? **38,** xxx, 78-79. **Turner, C. H.**—A notice on the hunting habits of an American Ammophila, **5,** xviii, 13-14. **Wheeler, W. M.**—The North American ants of the genus Camponotus Mayr, **321,** xx, 295-354 (*). **Yerkes, R. M.**—Wheeler on ants (review), **324,** l, 74-77.

Doings of Societies.

ENTOMOLOGICAL SECTION, ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

Meeting of January 26, 1911; Mr. Philip Laurent, Director, presided; eleven persons present.

Mr. Rehn made a few remarks on a study of the Orthoptera of the Great Lake region of Central Africa in which he is now engaged. By the aid of an outline map he indicated the eastern limit of the great Congo Forest, the fauna of which is strongly represented in the Great Lake region. Specimens of *Polyspilota validissima,* a Mantid which the speaker found ranged almost across the Congo State, individuals of *Amorphoscelis,* an aberrant Mantid not previously examined by the speaker, and the type of the first African species of *Humbertiella,* a genus previously known only from the East Indies, were exhibited.

Mr. H. W. Wenzel reported the capture of *Aptenodes sphenarioides* in Philadelphia on January the 18th. He also spoke of the good work shown in some recent papers in which the species were well studied, particularly the life histories, as by Prof. Hopkins, in *Dendroctonus.* He also spoke of the value of a recent paper on *Pissodes.*

Dr. Skinner spoke in appreciation of the work being done by the African Entomological Research Committee and of the Bulletin they are publishing. He also exhibited specimens of *Argynnis sakuntala,* a species he had recently described, and compared it with *rhodope* and allied forms.

Meeting of March 23, 1911. Mr. Philip Laurent, Director, presiding; fifteen persons present; Mr. Nathan Banks, of Washington, D. C., visitor.

Mr. Banks said he came to Philadelphia to study some Hymenoptera in the Cresson collection. He was pleased to meet the members and would like to have a collecting trip with them in this locality and would also gladly exchange specimens.

Mr. Rehn exhibited specimens illustrating the variability in structural and color characters found by him in the Acridiid *Eritettix simplex*. One hundred and forty-eight specimens from Sulphur Springs, North Carolina, were the basis of his work. The supplementary carinae of the pronotum were found strongly or faintly indicated or lacking, while two marked, dominant, color phases were found, connected by a number of intermediates. The same speaker also exhibited the type of a remarkable new genus and species of African Mantidae.

Dr. Skinner exhibited a large series of *Lycaena enoptes, battoides* and *glaucon*. He considered them variants of one species.

Dr. Calvert gave a very interesting description of the country on the Pacific side of Costa Rica. There are no railroads in the province of Guanacaste, and in the wet season it is practically untraversable. While sleeping in a school house at Santa Cruz, he had been bitten by an insect and in the mornings found two specimens of a *Conorhinus* (which were exhibited), and attributed the bites to them.

Mr. Banks referred to the severe disease carried to man from monkeys by these insects in Brazil.

Mr. Laurent stated that some lepidopterists were under the impression that *Danais plexippus* was three-brooded in the State of New Jersey, which the speaker said was a mistake, and that he was sure that no species of Rhopalocera or butterfly, found in New Jersey, unless it was *Pieris rapae* or *Lycaena pseudargiolus*, was more than two-brooded, and that a number of species were represented by only one brood in a season, as for instance *Pamphila metea, pontiac, leonardus*, etc. The

speaker then went into details concerning the migrating habit of *Danais plexippus*.

Mr. Harbeck referred to the fact that insects are not infrequently cited and recorded in error. As an instance of this he mentioned *Carabus nemorellus* reported from Maplewood in the "New Jersey list."

Mr. Banks cited the Coddling Moth as illustrating the liability of error in stating the number of broods of an insect from dates of capture without actual breeding experiments from known females. The question of variation was generally discussed.—HENRY SKINNER, *Recorder*.

OBITUARY

DR. EDWARD PALMER.

The daily newspapers announce the death of this veteran botanical explorer and collector at his home, 207 Twelfth Street, Southwest, Washington, D. C., on April 10, 1911. He was born in England, January 12, 1821, came to America at the age of eighteen and settled first at Cleveland, Ohio. An interesting sketch of his life by W. E. Safford, read in celebration of his eightieth birthday, was published in the *Popular Science Monthly* for April, 1911. Although Dr. Palmer was primarily engaged in botanical researches, he made collections of animals also, including insects, some of his specimens of these last being in the Museum in Cambridge and Washington (see page 198 of this NEWS). His most noteworthy expeditions were to various parts of the southwestern United States and to Mexico. His zeal was maintained throughout his long life, as in 1910 he collected near Tampico, Tamaulipas, Mexico.

PROF. FELIX PLATEAU.

A recent number of the *Zoologischer Anzeiger* informs us of the death of this distinguished physiologist and entomologist on March 4, 1911, in Ghent, where he had long been a Pro-

fessor in the University. He was born June 16, 1841. His researches were largely directed to the little cultivated and technically difficult field of the functions of Arthropod organs and of the relations of these animals to the surrounding media. Some of his principal memoirs are *Sur la force musculaire des insects* (1865, 1866), *Recherches sur les Crustacés d'eau douce de Belgique* (1870), *Recherches physico-chimiques sur les Articulés aquatiques* (1871), *Qu'est-ce que l'aile d'un Insecte?* (1871), *Recherches expérimentales sur la position du centre de gravité chez les insectes* (1872), *Recherches physico-chemiques sur les articulés aquatiques. II. Resistance a l'asphyxie par submersion, action du froid, action de chaleur* (1872); *Recherches sur les phénomènes de la digestion chez les Insectes* (1874-77), *chez les Myriapodes* (1876), *chez les Phalangides* (1876), *chez les Aranéides dipneumones* (1877); *Sur les mouvements et l'innervation de l'organe central de la circulation chez les animaux articulés* (1879); *Influence de l'eau de mer sur les animaux d'eau douce et de l'eau douce sur les animaux marins* (1883), *Recherches expérimentales sur les mouvements respiratoires des Insectes* (1884), *Expériences sur le role des palpes chez les Arthropodes maxillés* (1885), *Recherches expérimentales sur la vision chez les Arthropodes* (1885-1889), *Les Myriapodes marins et la résistance des Arthropodes a respiration aérienne a la submersion* (1890); articles on the Arachnids (1895) and Crustacea (1900) in Richet's *Dictionnaire de Physiologie; Les fleurs, comment attirent-ils les insects?* (1904).* Most of these appeared in the publications of the Royal Academy of Belgium.

At its annual meeting in December, 1910, the Entomological Society of Belgium elected Prof. Plateau Honorary President. This title had been conferred previously on but two persons, Constantin Wesmael and Edmond de Selys Longchamps.

* For this partial list of Prof. Plateau's writings we have drawn chiefly on the bibliographies in Folsom's *Entomology* and v. Fürth's *Vergleichende chemische Physiologie der niederen Tiere* (1903). The latter contains summaries of some of these papers.

EXCHANGES.

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☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Cocoons and chrysalids of *C. promethea* and *P. troilus* for exchange for Lepidoptera in papers.--Edwin P. Meiners, 2624 N. Garrison Ave., St. Louis, Mo.

Catocalae and other Lepidoptera. Eggs of *innubens, cara, amatrix, ilia, piatrix* and hickory feeders. Also pupae of *regalis, imperialis, luna, modesta* and *P. ajax, troilus* and *cresphontes.*—H. A. Davenport, R. D. No. 3, Louisiana, Mo.

Lepidoptera for exchange from 1910, on pins, all named; also pupae of *cresphontes, troilus, turnus* for others.—F. Mulkmus, 3735 Cottage Ave., St. Louis, Mo.

Wanted—Elateridae and Buprestidae for other named Coleoptera. I also desire to exchange entomological bulletins of the various Experiment Stations for others not in my library, and for bulletins on plant pathology. Send lists.—C. O. Houghton, Delaware College, Newark, Delaware.

Lepidoptera on pins from this locality for exchange.—Ernst Frensch, Box 622, Stonington, Conn.

Wanted to purchase, or obtain by exchange, living pupae of *Papilio turnus* from the South and West.—John H. Gerould, Hanover, N. H.

Will sell for cash a complete set of Illinois Geological Reports, or will exchange for technical entomological writings; those dealing with parasitic insects preferred.—J. E. Hallinen, Interlaken School, Laporte, Indiana.

For Sale or Exchange—Living pupae of *A. luna* and *A. ajax;* also adults of *Anthocharis pima* and *sara*, both perfect and second.—N. Weil, Calhoun, McLean Co., Kentucky.

Wanted For Cash—Can. Ent., Vol. xxx, xxxi; Riley's First Missouri Report and other papers on North American entomology not in my library. Send lists.—W. Beutenmuller, Am. Mus. Nat. Hist., New York, N. Y.

Wanted—Bibliography of Economic Entomology, Part 6; Div. of Entomology, New Series, Bull. No. 15; Technical Bulletin 1; Old Series, Bulls. 1, 2, 4, 5, 8, 9, 10, 11, 12, 13, 18, 20, 26, 28, 30 and 33. Will pay cash or exchange.—Charles W. Hooker, Bureau of Ent., Washington, D. C.

Wanted—Correspondence with collectors of Lepidoptera desiring to take a trip of from 1 to 2 years in Malay Archipelago, or following the course of Amazon River in Brazil.—A. F. Porter, Decorah, Iowa.

Wanted—Living eggs of tent caterpillars (*Malacosoma* spp.) from the western United States. Kindly indicate food plant. Exchange or cash.—C. R. Crosby, 43 East Ave., Ithaca, N. Y.

Wanted No. American Buprestidae and Cicindelae. Will name and return Coleoptera in certain families for specimens of the above. Duplicates for exchange.—C. A Frost 40 Grant St., So. Framingham, Mass.

For Exchange—Eggs of *Hemileuca maia*, Cicindela and Lepidoptera in paper packages. Desire exotic or native butterflies and beetles.—A. Mares, 2517 So Homan Ave., Chicago, Ill.

Pupae of *P. modesta, Sm. excaecatus. S. eremitus, P. troilus, cresphontes*, cocoons of *luna, promethea, polyphemus, cecropia, chrysalids of Catocala illecta* in May and other species later. Butterflies and moths in papers and on pins.—R. R. Rowley, Louisiana, Mo.

Wanted for cash or good exchange, live fertilized females or fertile ova of *Versicolor*, *Pandorus*, *Achemon* and *Bicolor*; can supply fertile ova of hybrid *Actias selene*, *luna*, *Antherea mylitta* and others.—James L. Mitchell, 212 Indiana Trust Building, Indianapolis, Indiana.

Wanted addresses of reliable collectors or dealers in Florida, Texas, New Mexico and California for the exchange or purchase of Lepidoptera.—Carlo Zeimet, 170 William St., New York.

Butterflies—I will name **spread** North American butterflies. Many rare species for exchange.—Dr. Henry Skinner, Logan Square, Philadelphia, Penna.

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Miscellaneous Notes and Descriptions of North American Coleoptera, by H. C. Fall, 109 pp. 1.00

New and Little-known Bees, by T. D. A. Cockerell, 51 pp. 50

New species of Noctuidae for 1910. No. 2, by J. B Smith, 16 pp. 15

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